Armies of the Middle Ages, volume 2

Organisation, tactics, dress and weapons. 174 illustrations and 105 coats-of-arms

The Ottoman Empire, Eastern Europe and the Near East, 1300-1500

by Ian Heath

Albania, Bulgaria, the Byzantine Empire, the Catalan Company, Cilician Armenia, Cyprus, the Sultanate of Delhi, the Golden Horde, the Holy Roman Empire, the Hospitallers, Hungary, the Hussites, Lithuania, the Mamluks, Moldavia, the Morea, Muscovite Russia, the Navarrese Company, the Ottoman Empire, Poland, the Principality of Achaea, Serbia, the Teutonic Knights, the Timurid Empire, Transylvania, the Empire of Trebizond, Venice, Vijayanagar, the White Sheep Turks and Wallachia

A WARGAMES RESEARCH GROUP PUBLICATION

Armies of the Middle Ages

Volume 2: The Ottoman Empire, Eastern Europe and the Near East, 1300-1500

Organisation, tactics, dress and weapons.
174 illustrations and 105 coats-of-arms

by Ian Heath

Albania, Bulgaria, the Byzantine Empire, the Catalan Company, Cilician Armenia, Cyprus, the Sultanate of Delhi, the Golden Horde, the Holy Roman Empire, the Hospitallers, Hungary, the Hussites, Lithuania, the Mamluks, Moldavia, the Morea, Muscovite Russia, the Navarrese Company, the Ottoman Empire, Poland, the Principality of Achaea, Serbia, the Teutonic Knights, the Timurid Empire, Transylvania, the Empire of Trebizond, Venice, Vijayanagar, the White Sheep Turks and Wallachia

A WARGAMES RESEARCH GROUP PUBLICATION

INTRODUCTION

Unlike its companion volume, *Armies of the Middle Ages, volume 1,* this book deals largely with geographic areas that are almost as remote from the English-speaking world today as they were in the 14th-15th centuries. Written information on those regions is, as a result, in very short supply, and generally when it reaches our shores it is in an alien language or alphabet with which most of we lesser mortals are entirely unfamiliar. This book is therefore an attempt to fill a somewhat larger gap than any of the others I have written, but at the same time it omits rather more than it includes since proportionately little contemporary material has managed to survive the ravages of the last 5 centuries, and what has survived 500 years of foreign occupation, Turkish invasions, Balkan wars and peasant revolutions is largely available only in its original language. Most of what is included here is therefore culled from English or French books and translations studied over an extended period in Cambridge University Library, for access to which I am deeply indebted to the Library authorities. Other people to whom I owe my thanks for assistance directly or indirectly rendered include Phil Barker; the late Alan Nickels; Dr Erwin Schmidl; Dave Alsop; Dr David Nicolle; Peter Sherwood of the School of Slavonic and East European Studies; Roman Olejniczak, for his usual invaluable help on mediaeval Polish warfare; and the authors of all the books listed in the bibliography, and others besides, without whose own research in a difficult field of study this volume would not have been possible.

One thing that did become apparent as my research proceeded was that this book could easily have been called 'Armies and Enemies of the Ottoman Empire', since of all the nations or political entities it covers only the peoples of India never came into conflict with the Ottoman Turks during this period. Indeed, there are very few pages in this book on which some allusion or reference to the Ottoman Turks does not occur somewhere. It is the Balkans that captured my particular attention, however, where in the mid-15th century charismatic historical figures such as Scanderbeg, Dracula and Janos Hunyadi led wonderfully colourful armies against the Turks; theirs was a world which, once it had fallen, was never to re-emerge in its original form, even after the collapse of the Ottoman Empire in Europe in the late-19th century.

As in volume 1, foreign terms are set in italic type where they first occur but thereafter usually appear in Roman. Though many variants occur, I have adhered to contemporary spellings for personal and place names wherever possible, except where a modernised spelling has become widely accepted. In addition, in keeping with modern parlance I have chosen to use the terms 'Mongol' and 'Tartar' interchangeably, historically inaccurate though this is.

Ian Heath
July 1984

Photoset and printed in England by Flexiprint Ltd., Worthing, Sussex

CONTENTS

ORGANISATION

THE OTTOMAN EMPIRE

Ertugrul, the founder of the Ottoman (or Osmanli) dynasty, was leader of a Turcoman tribe which had been ostensibly granted lands in western Anatolia in exchange for military service by the rapidly declining Seljuk sultanate late in the 13th century. It was his son Othman or Osman (c.1280-1324) who laid the true foundations of the Ottoman state, energetically expanding his territory at the expense of Byzantine provinces in Asia Minor such as Bithynia, which was overrun in 1299. Ottoman military strength was at first of modest proportions (Ertugrul had allegedly served the Seljuks with no more than 400 horse), but their proximity to the Christian frontier meant that large numbers of religious fanatics, freebooters and footloose nomads could usually be called upon for most military expeditions. However, such irregulars obviously could not be depended upon, and before long they were replaced by a small, probably salaried nucleus of semi-regular infantry, and possibly cavalry, backed up by a feudal army organised along similar lines to that of its Seljuk predecessor. The infantry element of the former, called *yaya* or *piyada,* were raised on the basis of one man per 25 households, being granted tax-exemptions plus, probably, regular salaries whilst on campaign. It is likely that they had been established by the mid-14th century. However, the cavalry element (*musellem,* meaning 'tax-exempt') — though it may have been established at much the same date — seems to have made a relatively late appearance, the first reference to it dating only to 1421. The musellem were simply mounted yaya, and probably received pay and tax-exemptions on the same basis. As their military importance subsequently waned, reducing them to the level of second-line troops, both were later to receive land grants in place of tax-exemptions or salaries.

The feudal army

The basis of feudal service under the Ottomans was the *timar*, a non-hereditary grant of land, comparable to the old Seljuk *iqta*, which may have been introduced as early as the reign of Osman and certainly before the mid-14th century. This varied somewhat in size, its value in annual revenue ranging from as little as 750 aspers (*akjes*) right up to 20,000, a fief in excess of this value being called a ziamet.* The holder of such a fief, called respectively a *timariot* or *ziam* (more correctly *za'im*, meaning 'chief' or 'leader'), was entitled to all or part of the taxes levied on his fief, as well as a fifth to a third of the fief's yield. In exchange for this he performed mounted military service, which was calculated on the basis of the timar being worth 1,500-3,000 aspers in Anatolia or 6,000 in Rumelia (i.e., the European part of the Ottoman state); for a timar of this value, service was required from the timariot himself plus a similarly armed horseman comparable to the European esquire and called a *cebeli* (a name derived from the Turkish *cebe*, in turn from Mongol *gebe*, meaning a mail corselet), and a less well-equipped slave horseman or groom called a *gulam, oghlan* or *kul.* For each additional 3,000† aspers (or 4,000 in the case of a *subashi* and 5,000 in the case of a ziam or *sancakbey,* for which see below) one extra cebeli was required, and on this basis it was reckoned that a large fief could field as many as 15 men. Some timariots, however, provided up to 50 more *cebelu* than required since, as in feudal Europe, the size of his retinue to a certain extent depended on, or even established, the timariot's personal standing, annual monetary awards sometimes being granted by the sultan in exchange for the appropriate additional military service. Where the value of the timar did not fit neatly into the established scale of 3-5,000 asper units, the service of a gulam, oghlan or kul was required for the outstanding fraction. The oldest surviving timar *defter* (register), dating to 1431, says that the smallest fiefs, those of just 750-2,000 aspers, were held by cebelu rather than timariots, those between 1,500-2000 aspers being required to field in addition a gulam or oghlan. The most common term in use in modern sources for all Ottoman feudal cavalry, regardless of rank, is *sipahi*, another word of Persian origin. This derives from *timar sipahiler*, one of the assorted alternative names for the timariot that are to be found in the sources (which include in addition *timar sahibi, timar erleri* and *ehl-i timar*). Failure to perform their requisite military obligations resulted in the temporary or permanent confiscation of all or part of a timariot's fief. Nevertheless, one western source records towards the end of the 15th century that 'the sipahis are assembled only with difficulty and are poorly-armed. Some carry a lance, but others only a sword and a bow'.

---

*In fact it was at first called a *hass* ('special'), and its holder a *hassa-i za'im,* but during the 15th century the term ziamet gradually came to prevail, the name hass instead being transferred to the very largest type of fief, with a value in excess of 100,000 aspers. This was usually held only by the sultan, members of his family, or high-ranking state officials.

†This was in Rumelia. Bastav Serif suggests that 'in the other provinces' the timariot probably 'was obliged to field a soldier for each extra *2,000* aspers'.

On campaign the sipahis were organised on a decimal basis, the largest unit being of 1,000 men under an *alay bey* ('muster leader', sometimes called a *binbashi*). Elected by the sipahis from amongst themselves, this was the highest rank a provincial sipahi could attain. He was responsible initially for mustering the unit (hence his title), and he was normally assisted by two lieutenants, the *beyrak-dar* (standard-bearer) and the *cavus* (sergeant-at-arms — see page 10). Since in practice each *sancak*, or province, of the Empire seems to have fielded between 1,000 and about 3,000 sipahis during this period, its governor, called a sancak bey, must have customarily been accompanied by between one and three such *alay beyi* on campaign. In addition to leading the sipahis of his sancak in wartime plus a retinue of at least 20 sipahis of his own, the sancak bey also co-ordinated the collection of taxes and performed other non-military administrative duties. He appointed police chiefs (subashis) in each major town and city, who in wartime probably commanded several hundred men, or at least 100. Normally, however, a unit of 100 men appears to have been the responsibility of a *ceri-bashi* ('troop-leader'), chosen from amongst the ziams of each *koda*, or sub-district. Officers called *ceri-surucus* ('troop-drivers') may have been responsible for the smallest units, of 10 men, but little is heard of these 10-man troops beyond the fact that when the army was first mustered it was customarily arranged for one man in each 10 to stay behind and administer tax collection during the absence of his comrades. A unit of 50 men may also have existed, as it did among the Janissaries (see below); certainly Michael Kritovoulos (who wrote in 1467) describes an assembly held by Mehmed II at the siege of Constantinople in 1453 in which there are mentioned 'captains over a thousand, over a hundred and over 50'.

The sancaks in Asia and Europe were governed respectively by the *beylerbeyi* of Anatolia and Rumelia, often the sons of the reigning sultan. The office of beylerbey of Rumelia was seemingly introduced as early as the end of Orkhan's reign (1324-59), that of Anatolia in Bayezid I's reign (1389-1402), though Laonikos Chalkokondyles (who wrote c.1480) says that there were two beylerbeys for the first time only after the fall of Constantinople in 1453. By the latter part of Mehmed II's reign (1451-81) there were at least 48 sancaks, 20 of them in Asia and 28 in Europe, as follows:

Anatolia		**Rumelia**	
Amasye	Mytilene	Angelokastron	Morea
Ankara	Nigde	Arta	Nicopolis
Antalya	Saruhan	Athens	Ochrida
Aydin	Sinope	Bosnia	Philippopolis
Biga	Teke	Edirne (Adrianople)	Shkoder (Scutari)
Brusa (Bursa)	Trebizond	Egriboz (Negroponte)	Silistria
Izmit (Nicomedia)		Gelibolu (Gallipoli)	Skopje
Iznik (Nicaea)		Gumulcine (Komotini)	Smederevo
Karaman		Herzegovina	Sofia
Kastamonu		Istanbul (Constantinople)	Thessalonika
Kayseri (Caesarea)		Kaffa	Tirhala
Konya (Iconium)		Karaferia	Vidin
Kutahya		Leukas	Vize
Menteshe		Malkara	Vlore (Avlona)

The number and arrangement of the sancaks must have undergone constant change. Chalkokondyles, writing at or soon after the very end of Mehmed II's reign, reports 40 Anatolian and 36 Rumelian sancaks, while a Venetian writing in 1496 lists 34 in Anatolia and 28 in Rumelia. An Hungarian list of much the same date gives similar figures of 36 Anatolian and 25 Rumelian sancaks, fielding 5,500 timariots and 37,500 cebelu (*'loricati'*) and 4,500 timariots and 22,500 cebelu respectively, or 70,000 sipahis in all. These figures average out at about 1,100 sipahis per Rumelian sancak and 1,200 per Anatolian sancak. The Burgundian traveller Bertrandon de la Brocquière, who visited Turkey in 1433, probably had the sancak beys in mind when he wrote that the beylerbey's 'pensioners' were each 'bound to supply him at their own expense, one with 1,000 men, another with 2,000, another with 3,000, and so on with the rest', which tends to confirm that most sancaks could field some 1-3,000 sipahis, though 15th century lists of the fiefs in various provinces would indicate that some were only able to maintain between 500 and 1,000 at the very most.

Elsewhere Brocquière says that 'those to whom [property or lands] have been given are bound to serve him [the sultan] in war, with a certain number of troops at their own expense. It is thus that Greece annually supplies him with 30,000 men . . . and Turkey 10,000, for whom he only finds provisions. Should he want a more considerable army, Greece alone, so I am told, can then furnish him with 120,000 more; but he is obliged to pay for these. The pay is 5 aspers for the infantry and 8 for the cavalry. I have, however, heard that of these 120,000 there was but half — that is to say, the cavalry — that were properly equipped, and well-armed with tarquais and sword; the rest were composed of men on foot miserably accoutered'. He adds:

'Other persons, whose testimony I regard as authentic, have since told me that the troops Turkey is obliged to furnish when the sultan wants to form an army amount to 30,000 men, and those from Greece 20,000'. Konstantin Mihailovic, a Serbian who served alongside the Janissaries in 1455-63, reported that Anatolia's sipahis numbered 60,000 and Rumelia's 70,000; another source says Anatolia could field 30,000 and Rumelia 80,000, and yet another that 150,000 could be fielded in all.

Christian troops

These took two basic forms. Most were initially contingents supplied by tributary Balkan princes, in particular those of Serbia, Bulgaria and Wallachia, but others were actually feudal cavalry provided in exchange for timars or tax-exemptions. This latter category was comprised chiefly of the same land-owning military aristocracy as had existed before the Ottoman conquest, the members of which had been permitted to retain their lands in exchange for performing similar military service for their new masters. To a certain extent their numbers declined over the years as many embraced Islam or were evicted for misdemeanours, but even as late as 1439 John Torzelo estimated that the Christian sipahis and their retinues totalled some 50,000 men. In Albania in 1431, 60 timariots out of 335 were still Christians; similarly, in the sancak of Tirhala there were 36 Christian timariots out of 182 in 1455, and in Branicevo in Serbia 62 out of 125 were Christians. In the last case there were in addition 40 Christian crossbowmen, 217 *voynuks* and 503 *yamaks* (from *jamaq*, 'companion') under 61 *lagators* (see page 17). The term voynuk derived from the Serbian *voynici* (see page 51), in Ottoman usage indicating an armoured Balkan Christian foot-soldier (the yamaks were unarmoured) who provided his military service in exchange for certain tax-exemptions. Such troops are to be found under this name throughout the Balkans — in Albania, Bosnia, Bulgaria, Herzegovina, Macedonia, Serbia and Thessaly — and the surviving records indicate that there were considerable numbers of them. In Branicevo in 1467/8 each 5 Christian households were expected to provide one voynuk, as were each 10 households in Herzegovina in 1478, these figures probably being representative for other regions too. Mouradja d'Ohsson's late-18th century survey of Ottoman organisation says that the voynuks were first incorporated into the Ottoman military system in 1376 by order of Murad I, while the Ottoman chronicler Sa'd ed-Din, who wrote in the 16th century but relied heavily on earlier sources, gives the same date but attributes their 'foundation' to the Rumelian beylerbey Kara Timurtash. In the 15th century the voynuks are recorded as providing an important element of the Ottoman army. Their overall command was placed in the hands of a *voynuk bey*, with individual units under ceri-bashis.

Another adopted term under which Balkan Christians could be found serving was *gönder*, which was of Byzantine origin, being derived from *kontarion* ('lance'). A manuscript of the first half of the 15th century defined a gönder as comprised of a voynuk and 2 or 3 yamaks, while another, of the second half of the century, says voynuk and 2 yamaks. Elsewhere 4 or sometimes even 5 men are mentioned, but on the whole it would appear that the gönder was a unit of 3 or 4 men comparable in many ways to the European lance except in being unmounted. A document of 1477 expects the service of a gönder per 5 households in the Branicevo and Vidin areas.

Many voynuks may have originally been those men who made up the tributary contingents which the Balkan princes had been obliged to supply, in most cases, since the 1370s or 1380s (Halil Inalcik suggests that the easy absorption of Christian elements into the Ottoman army was probably 'facilitated . . . by their previous experience as auxiliary forces'). Bertrandon de la Brocquière enumerates these contingents ('who serve through force') as 'Greeks, Bulgarians, Macedonians, Albanians, Sclavonians, Wallachians, Serbians, and other subjects of the despots of that country.' Small wonder, then, if Tamerlane did, as Doukas claims, describe Bayezid I's army at Ankara in 1402 as *mixobarbaroi*, meaning half-Greek and half-Turkish — doubtless intended as a derogatory reference to the Ottoman predilection for Christian auxiliary troops. For details of contingents supplied by the Byzantines, Serbs and Wallachians, see pages 20, 53 and 57, and for other Christian auxiliaries see below, page 11.

The Janissaries

As we have already seen, the first paid Ottoman infantry force, probably only established after 1340, and possibly after 1350, comprised the yaya or piyada. This was in truth no more than a levy of tax-exempted Turkish irregulars raised for occasional siege operations, paid an asper a day for the duration of a campaign, and disbanded on its completion. Although properly organised in units of 10, 100 and 1,000 men whilst on active service, they remained no more than a booty-seeking rabble, occasionally even being referred to as 'vagrants', and proved something of a failure in military terms. They were therefore replaced soon after by a new, standing army called the *Yeni-ceri* ('New troops'), a name which later western writers were to corrupt into 'Janissary'. This was most probably founded in 1362, by the application of the law of *ghanimat* (booty)

being extended to include prisoners, one-fifth of whom were subsequently to be surrendered to the sultan.* The Janissaries were therefore a slave army initially made up of Christian prisoners converted to Islam; Doukas reports that 'among them could be found neither Turk nor Arab, but all of them without exception were Christians — Byzantines, Serbs, Albanians, Bulgarians, Wallachians, and Hungarians.' The practice of drafting such prisoners into the ranks of the Janissaries continued throughout this period (for example 320 Serbs when Novo Brdo fell in 1455, 800 Trapezuntine youths on the fall of Trebizond in 1461, and 1,500 Genoese after the fall of Kaffa in 1475), but by the 1390s at the very latest a secondary means of maintaining their numbers was also being utilised. This was the *devshirme*, a levy of children and youths forcibly imposed on the sultan's Christian subjects. We only first read of it in a sermon of 1395 by Bishop Isidore Glabas of Thessalonika (which was at that time in Turkish hands), but according to Idris al-Bitlis, writing at the very beginning of the 16th century, it may have been introduced simultaneously with the foundation of the Janissaries in Murad I's reign. After 1395, however, we only next encounter any references to the practice in 1430 and 1438, which has led to the suggestion that it may have been 'suspended in the years of confusion following the Battle of Ankara', and reintroduced under Murad II as part of the reorganisation of the Janissaries — mentioned but, alas, not described by Pseudo-Sphrantzes — which took place after the Janissary mutiny of 1446. Certainly the devshirme (which the Byzantines called *paidomazoma*) was well-established by the 1430-60 period, as witnessed by the appearance of immunity from it as a concession in several terms of capitulation (e.g., Ioannina in 1430 and Galata in 1453). At first it was seemingly only levied on an occasional basis when the number of boys taken captive in war was insufficient to maintain the Janissaries' numbers, but by the mid-15th century it appears to have been levied on a regular 5-yearly cycle. European sources record the age limits of those taken by devshirme as 8-20, but later Ottoman sources put the lower limit at 15. Certainly Jacopo de Promontorio reports c.1475 that 2,500 15-year-old boys were taken by the Ottomans 'each year', of whom 1,500 were drafted into the Janissaries (the remainder probably going into the *Qapu Khalqi,* for which see below). Konstantin Mihailovic says in his 'Memoirs' that there were normally 'about 2,000 of these boys' under training. He explains that they were sent 'across the sea', i.e. to Anatolia, where individual sipahis were responsible for teaching them at their own expense. Other sources give fuller details, claiming that such trainees were placed at the disposal of sipahis in both Anatolia and Rumelia for their first 5-7 years of service in order to learn the Turkish language, customs and religion, and were then posted to Gallipoli (or to Constantinople after 1453) and subsequently selected for palace or military duty according to their abilities, most ending up as Janissaries. Mihailovic himself only appears to have received about one year's training, but he was not actually a Janissary (he appears rather to have been some sort of quarter-master). His account of standard Janissary training says that the authorities 'ship back [from Anatolia] those who are suitable and these study and train to skirmish in battle. Already the sultan provides for them and pays them a wage. From there he chooses for his own court those who are trained and then raises their wages.'

The Janissary corps was properly called an *ocak* ('hearth'). By the latter part of this period it comprised two distinct bodies, these being the *Cema'at* (translated as 'Company' by many modern authorities, but as 'Reunion' or 'Assembly' in the *Encyclopaedia of Islam*), and the *Segban* ('Hound-keepers' or 'Huntsmen', popularly called the *Segmens*), which was added following a Janissary revolt soon after the capture of Constantinople. A third division, the *Boluk,* was later added by Selim I (1512-20). Of these three, the Cema'at remained the largest element even in the 16th century, though the Boluk was by then pre-eminent. The Cema'at's original function appears to have been to provide the fortress garrisons that were established in conquered provinces during the 14th century. Mouradja d'Ohsson, for instance, wrote at the end of the 18th century that one Cema'at *orta* (see below) had been based in Vidin ever since its occupation in 1396. It was therefore undoubtedly the Cema'at rather than the Segban that provided the Janissary garrisons that we often read of being put into captured towns and fortresses in the second half of the 15th century — for example, 400 each into Corinth and Sparta in 1460 according to Kritovoulos. The overall command of the Janissary corps was in the hands of the *Yeni-ceri Aghasi,* or Aga of the Janissaries, with the commanders of the Segban and, later, the Boluk (the *Segban-bashi* and *Kul kahyasi* respectively) as his adjutants. After the incorporation of the Segban into the Janissaries the Aga was normally chosen from among its ranks. Other senior officers in order of rank included the *Zagharci-bashi* ('Chief of the bloodhound-keepers'), *Muhzir-aga* ('Chief of the ushers'), Senior and Junior *Khasseki,* and the *Bash-cavus* ('Chief of the sergeants').

Cema'at and Segban were each subdivided into companies, called *orta,* of which there were 165 after the incorporation of the Boluk, rising to 196 by the reign of Suleiman the Magnificent (1520-66). Of this latter total 101 ortas were Cema'at and 34 Segban, figures which may also apply for the 15th century. Chalkokon-

*Those in excess of multiples of 5 were retained by their original captor, who instead had to pay the sultan 25 aspers per head.

dyles, writing of Mehmed II's reign, states that 'the ortas had each an establishment of 50 men', but their strength probably varied with the passage of time — Mihailovic, for instance, writing in Bayezid II's reign, mentions Janissary 'centurions' (though he also mentions that the troop of Janissaries with which he was provided as commander of Jajce was 50-strong). The smallest unit was a squad of 10 men; the 'Ordo Portae', a survey of the Ottoman army written in vulgar Greek between 1473-81, says that each 10 Janissaries received a horse, tent and trunk, adding that if one of the Janissaries died he was replaced immediately 'so that their numbers are always complete.' (This source also tells us that the Janissaries were paid 3-5 aspers per day and their Aga 100 aspers, and we know from other 15th century sources that these salaries were paid out every 3 months.) Each orta was commanded by a *corbaci* ('soup-maker'), assisted by a staff comprising *oda-bashi* ('chief of the barrack room', i.e., adjutant); *wakil-khardj* ('controller of the expenditure', or company clerk); *beyrak-dar* (standard-bearer); *bash-eski* ('chief of the veterans', the oldest soldier in the orta); *ashci-bashi* ('chief cook', i.e., quarter-master); and *sakka-bashi* ('chief water-carrier'). Some orta commanders also commanded larger elements of the entire corps. Promotion was by seniority.

As to the numerical strength of the Janissaries, contemporary accounts and modern estimates vary wildly. Some of the latter give them no more than 1,000 men under Murad I and Bayezid I, and only 1,200 even under Mehmed II. However, what evidence there is for such statements is not made clear. Certainly it is undeniable that their numbers in the 14th century may have initially been small (some contemporary accounts do not mention them at all), but there is no indication that they were ever that small. Bertrandon de la Brocquière, whose account seems reliable, does not mention the Janissaries in his chronicle (unless the infantry amongst the 5,000 household troops he records are they), but at a later date (c.1440) he wrote that the *Jehanicères* were 10,000-strong, though he admits that he was given the figure by a Greek whom he met. The figure of 3,000 is given for Murad II's reign by the 'Ordo Portae', which adds that his successor Mehmed II raised their numbers first to 5,000 men, and then to 10,000 during the war against the White Sheep Turks (1472-73); however, of these 2,000 were killed in the campaign so that when the war ended they stood at 8,000. To a certain extent this version of events is corroborated by other accounts — Chalkokondyles, for instance, puts Janissary strength in the latter part of Mehmed II's reign at 6-10,000, while a letter written to the pope by the Venetian Laurus Quirino in 1464 mentions 7,000 Janissaries. Our eye-witness Mihailovic, the so-called 'Serbian Janissary', writing of c.1455-63, says that there were only 'about 4,000', though he qualifies this by saying that these were at the sultan's court, thereby excluding from his figure those posted in the provincial fortresses. Doukas mentions the figure of 10,000 Janissaries repeatedly in his chronicle — at Ankara in 1402 (where an anonymous contemporary Ottoman account mentions 5,000 to have been present), at the siege of Constantinople in 1453, and 'now' (c.1461) — but it should be borne in mind that he may be referring to the Qapu Khalqi in general rather than the Janissaries alone (see below). Alvise Sagudino, another Venetian, this time writing in 1496, says there were 8,000 Janissaries, while Janus Lascaris, who visited the Levant twice between 1484-92, provides the interesting statement that they numbered 7-10,000, the latter when at full strength. This may be the key to the fluctuating figures found in sources of the second half of the century, which may alternatively be explained by a deliberate policy of increasing Janissary strength prior to major campaigns. All in all it seems certain that the strength of the Janissary corps increased steadily throughout the reigns of Mehmed II and Bayezid II, from 5,000 at mid-century, to 6-7,000 during the 1460s, and 8-10,000 for the rest of the century. There are some even larger numbers quoted in the sources: Leonard of Chios (1453) and Arnold von Harff (1499) claim 15,000 and 32,000 Janissaries respectively, but these figures are totally unconvincing.

In closing, it should be noted that the appearance of the Janissary ocak in Murad I's reign did not automatically result in the total disappearance of the yaya, who are mentioned as being present at the Battle of Kossovo Pole in 1389, and fighting for Murad II both in the civil war of 1421 and in his attack on Corinth in 1446. However, at least some of these occasional references may nevertheless be allusions to the Janissaries, since one source says that the men of the Cema'at were themselves often called *yaya beyleri*. Indeed, if the reference to yaya at Kossovo is *not* intended to denote the Janissaries, then neither they nor the Qapu Khalqi are mentioned in a single contemporary source as being present at that decisive battle (though a later source allegedly mentions that the Ottoman van included 'the Aga of the Janissaries with his 2,000 archers').

The Qapu Khalqi

The Qapu Khalqi ('Gate-people' or 'Court-people'), also known as the *Qapu Kullari* ('Gate-slaves' or 'Court-slaves') was in origin the sultan's own army of dependent household slaves, 'originally manned by prisoners and mercenaries, Moslem and non-Moslem alike' as Stanford Shaw puts it. Its alternative name gave rise to the word *Capiculari* which often occurs in western sources, and the 'Qapu' element of both forms was the origin of the word 'Porte' which was soon being applied to the central Ottoman government and the

sultan's standing army alike by Byzantine and European chroniclers. Though it later came to include the Janissaries, the Qapu Khalqi was initially always mentioned separately from them, and it is under this name that the sultan's slaves are recorded fighting at Ankara in 1402 and Varna in 1444. Doukas too, when recording the presence of the Porte at the Battle of Nicopolis in 1396, probably intends the Qapu Khalqi (or perhaps the Qapu Khalqi *and* the Janissaries, since any distinction between the two may not have been clear to him). He describes them on this occasion as 'the Turks called *porta*, that is palace guards, who were redeemed slaves from diverse Christian nations and numbered more than 10,000'.

The principal military element of the Qapu Khalqi was initially comprised of several companies of cavalry, collectively known as the *Qapukulu Suvarileri.* There were in time 6 of these, the first of which were established from his own salaried horsemen by Kara Timurtash, beylerbey of Rumelia, whom we have already met. This was probably in 1376. These were known as the *Ulufeciyan* or 'Salaried men' ('mercenaries, that is to say,' as the 'Ordo Portae' succinctly observes); they were divided into left and right — i.e. *Ulufeciyan-i yesar* and *Ulufeciyan-i yemin* — indicating their battlefield position in relation to the sultan, thus constituting two companies. The next two units, established soon afterwards, were the *Gureba,* similarly comprised of *Gureba-i yesar* and *Gureba-i yemin* but this time made up of Moslem mercenaries from further afield, mostly Arabs, Persians and Kurds, but seemingly occasionally Tartars (see below); hence their name, meaning 'Strangers' or 'Foreigners'. The Ulufeciyan and Gureba together comprised the *Bolukat-i Erba'a,* meaning 'Four Boluks' (or 'Four Companies'). The final two companies, the *Silihdars* ('Weapon-bearers') and the *Sipahi-oghlan* ('Sipahi children') were probably established in Mehmed I's reign, thereafter constituting the elite of the corps. They drew up on the immediate right of the sultan in battle, and along with some of the Ulufeciyan were recruited from among the Janissaries and household slaves (these both being drawn from the *adjami-oghlan,* or 'foreign youths', raised by the devshirme system mentioned above; the Sipahi-oghlan appear to have been drawn specifically from among slaves who were the children of noble families). Each of the six companies of household cavalry was commanded by an Aga, and in the 16th century at least they were organised in squadrons of 20 men. The 'Ordo Portae' tells us that the Sipahi-oghlan were paid 20-25 aspers per day, the Silihdars 10-20, the Gureba 6-10, and the Ulufeciyan 5-6. They were paid quarterly like the Janissaries.

An early reference to the strength of the Ulufeciyan and Gureba is to be found in the chronicle of Johann Schiltberger, an eye-witness on the Ottoman side at the Battle of Ankara, who describes how at the end the sultan stood with a single body of 1,000 cavalry — doubtless the Four Boluks. However, according to a 16th century source the Four Boluks originally numbered 2,400 men, though this may be a mistake for all 6 companies. Certainly the 'Ordo Portae' records the strength of the latter in Mehmed II's reign as 700 Ulufeciyan, 400 Gureba, 600 Silihdars and 600 Sipahi-oghlan, adding up to a total of 2,300, while Bertrandon de la Brocquière (who refers to the Ottoman household troops — probably excluding the Janissaries — as comprising 5,000 salaried cavalry and infantry in all) mentions in another passage that Sultan Murad II had '2,000 or 3,000 slaves of his own', among whom there were many Christians — doubtless a reference to the household cavalry. Janus Lascaris too, later in the century, records that there were at the Porte 3,000 'knights who call themselves slaves' who are 'limited to a maximum strength of 5,000'. Arnold von Harff, who visited Constantinople in 1499, gives figures of 600 and 700 respectively for the Silihdars ('mostly renegade Christians') and the Sipahi-oghlan ('who were his bodyguards'), thereby basically confirming the 'Ordo Portae', adding that there were also 7-800 trainee Silihdars, presumably adjami-oghlan recruits. Chalkokondyles, on the other hand, mentions a unit of only 200 bodyguards who are probably the Sipahi-oghlan, or an element thereof, and 300 others (later 500) who are probably the Silihdars. Mouradja d'Ohsson cites figures for the latter two companies under Mehmed II that are ridiculously high (10,000 and 8,000) even if one allows for the armed and mounted slaves that 16th century sources relate were maintained by household cavalrymen (5 or 6 by Sipahi-oghlan, 4 or 5 by Silihdars, and 2 or 3 by Ulufeciyan).

In addition to these companies the sultan also had a personal cavalry guard, the *Müteferrika,* which derived its name (meaning 'Separated') from the fact that it was chiefly comprised of the sons of vassal princes, who were effectively held as hostages but received training whilst in the sultan's service. They performed military service only whilst on campaign, and probably numbered about 100 during this period. There were also special infantry guards called the *Solak* ('Left-handed') and the *Peyk* ('Messengers'), both recruited from amongst the Janissaries (the former were part of the Cema'at) and both commanded by bashis. The Solak marched on the sultan's left and right, and their name derives from the fact that those on his left were actually left-handed; it is they who Arnold von Harff is referring to when he talks of 'foot-soldiers, like archers in France, who always follow him or run after him, and in towns they keep order on the left hand.' The dozen archers Brocquière saw returning from a hunting trip with Sultan Murad II were probably part of the Solak (the 50 horsemen recorded on this occasion probably being Müteferrika), while the 20 or 30 'baston'-armed

slaves that he reports elsewhere as gate-guardians were possibly Peyks (but more probably Kapicis or Cavus — see below), since this unit appears to have been armed with axes or maces. The 'Ordo Portae' gives the Solak a strength of 80 men.

Mihailovic provides one of the most comprehensive breakdowns of the Qapu Khalqi military establishment that we have for this period, fuller even than that of the 'Ordo Portae', presumably describing it as it stood late in Mehmed II's reign, though his figures do not always even come close to tallying with those quoted above. He describes the household cavalry as comprising Gureba of 600 Tartars (presumably Crim Tartars) in two boluks of 300 men each; Ulufeciyan, of identical size to the Gureba; Silihdar of 300 men (i.e., only half the size quoted by the 'Ordo Portae'), whose task 'is to lead a horse before the sultan when necessary'; and Sipahi-oghlan, also 300-strong. The last he describes as 'the highest' of the household regiments: 'They have the task of carrying swords after the sultan, also having girded themselves with bows and arrows whenever necessary. It will fall to one of them to bear [a sword] once every year or two. All of them are mounted.' The Solak, whose task he says is 'to walk before the sultan with bows', he puts at 60-strong. In addition he lists another regiment, the *Kapici*, comprised of 200 gate-guardians under two *kapici-bashis*; the 'Ordo Portae' also mentions these 'amongst the Janissaries', though it puts their strength at only 80 men, paid 6-8 aspers a day. Since it is known from other sources that they performed the function of messengers as well as gatekeepers it seems likely that they were, or at least had once been, identical with the Peyk mentioned above.

Of the household regiments in general, including the Janissaries, Mihailovic reports that 'they have their task in common: at night to lie near the sultan, and they take the night watch silently. Whether there is rain or snow, winter or a blizzard or whatever sort of weather, each must remain in his place, each night 50 and when necessary sometimes 100. And none need concern himself about any weapon; the sultan provides whatever befits each of them according to his rank, whether cavalryman or foot-soldier — armour for horses and assorted weapons, according to their custom.' In addition he lists further elements of the Qapu Khalqi that have not yet been mentioned, comprising the *Casni-gir* or 'Tasters' (80 men); *Icoghlan*, basically chamberlains (50 men); *Mirahur* or grooms (200 men, responsible for the 2,000 horses which the sultan distributed 'as necessary, with saddles and accoutrements, especially when there is a great battle'); *Cebeci* or 'Armourers' (60 men, founded by Mehmed II and responsible not only for making the armour and weapons used by the household troops, but charged with their transport too, even serving in the field as handgunners); *Mehteri* or 'Tent-pitchers' (60 men, not to be confused with the *Mehteran-i tabl ü alem*, 'The Military Band', for which see page 106); and lastly cooks, camel-keepers and musicians, numbering 200 men in all. Finally, there was one further body which Mihailovic does not mention within his chapter on the Porte but does refer to elsewhere; this was the *Cavuslar*, described as comprised of 'courtiers on armoured horses', who in battle performed the duties of sergeants-at-arms, being sent out by the sultan 'to observe who is doing any brave deed and how the battle is going. And each of them holds a mace in his hand, urging [the troops] into battle . . . And wherever they are, it is as if the sultan himself were there; and everyone fears them, for whoever they praise in front of the sultan will get advancement, but woe betide anyone they criticise. Their leader is called the *Cavus-bashi*.' It is thus the Cavuslar to which Pseudo-Sphrantzes is referring in his version of the final assault on Constantinople, where he describes how when the Turks fell back 'the sultan's military police and court officials beat them back with iron maces and whips'. The 'Ordo Portae' puts their strength at 80 men.

Other elements of the Qapu Khalqi not listed by Mihailovic were the *Topcu ocaki* ('Ocak of the gunners') and *Top 'arabaci* ('Gun-carriage drivers') — for both of which see the section on artillery — plus the *Humbaraciyan* ('Mortar-men') and *Lagimciyan* ('Sappers'). The latter two, both established by Murad II (but see page 14), were organised identically: they were each divided into two elements, one of which received a regular salary and was attached to the Cebeci and was thus part of the Porte proper, while the other was scattered throughout the provinces, supported by timars and effectively coming under the command of the provincial governors. In addition the Qapu Khalqi element of the Mortar-men was further subdivided, with those who actually operated the guns on campaign being attached to the Topcu ocaki. Each of these various companies was organised into ortas.

The irregulars: 'azabs, akinjis and others

The *'azabs* (their name effectively means 'bachelors') seem to have originally evolved as marines in the amirates of Aydin or Menteshe in the late-13th or early-14th century, but in the Ottoman era the term generally applied to the masses of foot-soldiers recruited in whatever numbers were required for the duration of a campaign. According to Ottoman sources there were as many as 20,000 'azabs at Ankara in 1402 and Constantinople in 1453, while Mihailovic records that Anatolia and Rumelia could field 20,000 each. In

battle they were positioned in front of the Porte and feudal sipahis. They were mainly Turks and seem to have been provided and equipped on much the same basis as the yaya (one source even mentions Anatolian yaya and Rumelian 'azabs fighting side by side at Kossovo in 1389, so what differences there were must have been insignificant). In Bayezid II's reign they were raised on the basis of each 20 *khanes* (households) providing one man, who was supported during the course of the campaign by money and provisions supplied in lieu of taxes by those who stayed at home. Though mainly bow-armed, their equipment was far from uniform; Brocquière describes those of Rumelia as 'some having swords without bows, others without swords, bows or any arms whatever, many having only bastons [staves]. It is the same with the infantry supplied by Turkey, one half armed only with bastons. This Turkish infantry is nevertheless more esteemed than the Greek, and considered as better soldiers.' (See also notes to figures 3 and 4.) By the mid- or late-14th century many were beginning to appear in addition as parts of the garrisons of Ottoman fortresses.

The *akinji* were a light cavalry force which derived its name from the Turkish word *akin*, meaning a raid or an incursion into enemy territory — hence the term akinji, meaning 'raiders', which first appears in the chronicles in 1362. They were Turcoman ghazis in origin, who in the course of time became established under virtual dynasties of local chieftains (*uc beyi*, or 'frontier chiefs') at strategic frontier posts throughout the Balkans, notably in Hungary, Serbia, Moldavia, Wallachia and Greece. They were conscripted (voluntarily or otherwise) as and when required, in exchange for the usual tax-exemptions, their leaders receiving hereditary timars. It appears from Mihailovic's 'Memoirs' that most actually depended on horse-breeding for their livelihood; he says the Turks sometimes called them *gogmary*, apparently a corruption of Serbian *konjari* ('grooms'). He adds that 'if any of them does not want to go on a foray himself, he will lend his horses to others for half [of the booty]'. Another good description of the akinjis is provided by Mehmed II's treasurer, the Italian Giovan Maria Angiolello, who accompanied the sultan on his campaign against Uzun Hasan of the White Sheep Turks in 1473. He says that the akinji (*'aganzi'*) 'are not paid, except by the booty which they may gain in guerilla warfare. These men do not encamp with the rest of the army, but go traversing, pillaging and wasting the enemy's country on every side, and yet keep up a great and excellent discipline among themselves, both in the division of the plunder and in the execution of all their enterprises. In this part of the army there were 30,000 men [Angiolello's favourite figure], remarkably well-mounted'. Mihailovic provides us with the additional information that each akinji served with two good horses ('he leads one and rides the other'), and other sources tell us that their arms comprised lance, bow and sabre. Organisation was decimal, under officers called *tovijeler*, who received fiefs. Overall command of an akinji raid was in the hands of the sancak bey from whose province the akinjis were raised and the foray launched, who was called the *akinji bey* for the occasion.

Other cavalry included the *djanbazan* ('daredevils'), created either by Orkhan or in 1441 by Murad II to counter Janos Hunyadi's first Balkan expedition. They usually served in the vanguard of the army and therefore were probably drawn from the ranks of the akinji, but some authorities claim that they may have formed the bodyguards of sancak beys and beylerbeys. A seemingly similar body of light cavalry called *delis* ('madmen') was raised in the late-15th century from amongst converted Serbs, Bosnians and Croats; for further details of these colourful soldiers see *Armies of the Sixteenth Century*. Other irregular cavalry were provided by *yuruks* ('nomads', still called *türkmen* in Anatolia, where most were to be found) and Crim Tartars, the latter being supplied initially as independent auxiliaries but later, under Mehmed II, as a result of a vassal relationship that was hammered home by force in 1475. As an indication of their potential, various sources claim that there were as many as 30-70,000 Crim Tartars in the Ottoman army that marched on Moldavia in 1484.

Additional provincial troops were provided by the *derbentci*, formally established in the mid-15th century, and the *gönüllüyan* (volunteers), in both cases comprised of mixed cavalry and infantry recruited from the local population, to guard fortified road-houses (*derbents*) and fortresses respectively. The latter group were a mixture of Moslems and converted Christians, but the former were chiefly comprised of non-Moslems, though they included in addition many yuruks. An alternative name by which the derbentci became known in some parts of the Balkans in the 16th century was *martolos* (from the Byzantine *armatoliki*), but in this period the term indicated nomadic Vlachs of the Pindus mountains who received tax-reductions from the Ottomans in exchange for their military service as garrison troops, watching over the passes under hereditary *kipitanoi*. They are first mentioned under Mehmed II, but evidence indicates that they date back to Murad II's reign. Mihailovic says some had armour and that their arms comprised 'swords, shields, lances and also guns', but that there were not many of them — only 'several hundred', martolos and voynuks combined.

Field-army strengths

Most of the contemporary figures available for Ottoman armies are fairly inevitably the inventions of

chroniclers eager either to exaggerate a victory or to excuse a defeat, or — even worse — are the fantastic inventions of men who were as far away as possible from the battlefields that they describe. However, there nevertheless remain a few accounts where the integrity of the chronicler remains seemingly unblemished by hysteria or political expediency. We are told, for instance, that there were only 5,000 Turks at the Battle of Baphaeon in 1302, and 8,000 at Pelekanon in 1329, while the Damascene geographer Shehab ed-Din, who died in 1349, reported that Orkhan 'has an army of 40,000 cavalry and a large force of infantry. But his troops are neither particularly effective, nor as formidable as their numbers would seem to indicate', adding that 'he has 25,000 horsemen in the field daily against the lord of Constantinople'. From the mid-14th century on, however, realistic figures become harder and harder to find until, describing the Battle of Ankara in 1402, Schiltberger asks us to believe that the Ottomans mustered 1.6 *million* men! In fact, Ottoman and Christian sources alike so often claim huge figures for Turkish armies that we have to accept there may be a grain of truth in all their 'big battalions' stories, particularly since it is clear from all the details given above that, as their Empire grew, so the resources of the Ottoman military machine did indeed expand to an impressive size. Even the generally reserved Bertrandon de la Brocquière is forced to admit at one point that 'their armies, I know, commonly consist of 200,000 men', though he qualifies this by adding that 'the greater part are on foot, and destitute . . . of *tarquais* [quivers], helmets, mallets, or swords; few, indeed, being completely armed.' There may then be some truth in the account of an eye-witness who describes the Ottoman army at Nicopolis in 1396 as comprised of a vanguard of 24,000, main battle of 30,000, and rearguard and Porte of 40,000; but two Turkish chroniclers put Ottoman stength at the same battle as only 10,000 men, and the real truth probably lies somewhere between.

On the whole it seems likely that most armies raised by the Ottomans numbered 20-40,000 men, while the largest they fielded comprised some 60-80,000. The Ottoman sources even say that the army raised for the final siege of Constantinople only numbered about 80,000, though Christian accounts give figures that range right up to 700,000. Certainly all the sources on both sides agree that the army Mehmed II raised in 1453 was of an exceptional size, and the Ottoman figure on this occasion seems too low; Barbaro's claim of some 160,000 men (which tallies with Doukas' reference to the Ottomans outnumbering the defenders by 20 to 1) may therefore be a fairly good guess. The composition of one of the more typical larger Ottoman field-armies is provided by Francesco Philelpho, who saw that which marched against Trebizond in 1461; he says this was made up of 25,000 Rumelian sipahis, 15,000 Anatolian sipahis, 8,000 'azabs and 12,000 Janissaries (doubtless including the rest of the Porte in the last figure). A mid-15th century Ottoman source describing the army that fought at Kossovo in 1389 says it was 50-60,000 strong including 10,000 Anatolian sipahis, 10,000 Rumelian 'azabs and 20,000 irregular horse, the balance of 10-20,000 presumably comprising Rumelian sipahis and the troops of the Porte.

Artillery

There is some debate as to the exact date of the adoption of gunpowder artillery by the Ottomans. C. M. Cipolla, for instance, cites non-contemporary sources which claim that an iron gun was made at Brusa in 1364; that the Ottomans introduced artillery to India in 1368; and that cannons were used by the Ottomans in their second campaign against the Karamanlis in 1387 and on the battlefield at Kossovo two years later. Others claim in addition that guns were used at Nicopolis in 1396 (though A. S. Atiya concludes otherwise), while a 15th century Bulgarian chronicle claims that cannon were used by the Ottomans shortly before 1400, in their blockade-cum-siege of Constantinople which lasted with varying degrees of intensity from 1394 to 1402. In the latter instance a 15th century author, Ashiqpashazade, states that 'they did not yet know guns very well at that time; they came into regular use only under Murad [II] and Mehmed [II]'. Whatever the truth of these various claims may be, most authorities seem to agree that gunpowder artillery was in use by the Ottomans some time soon after 1400 at the latest, certainly by the reign of Mehmed I (1413-21), and clearly showed a marked increase during the Hungarian wars of his successor Murad II's reign. References to the use of guns in sieges are commonplace from this time — as at Constantinople in 1422, the defence of Antalya in 1424, at Thessalonika in 1430, Belgrade in 1440, and the Hexamilion in 1446 — and field-guns too had made their appearance by the 1440s at the very latest, and very probably by the 1420s.

The large siege-guns which were to become something of a trade-mark of Ottoman artillery were in use by at least 1422, in which year the Byzantine chronicler Joannes Kananos recorded very large — but not particularly effective — Turkish bombards (*boumpardai*) taking part in the siege of Constantinople, firing stones of 'excessive' weight and calibre. However, our best sources of information for such massive guns belong not to this siege, but to that of 1453, where the most famous was cast by an Hungarian (or, according to Pears, possibly Wallachian) technician named Urban, who had deserted from Byzantine employ. Kritovoulos, who was admittedly not present but had his information from eye-witnesses on both sides, describes this gun as 40 spans (about 30 feet) long, with a barrel 8 inches thick and a bore of 30 inches in

its muzzle half for the stone shot, and a bore of 10 inches in its breech half for the powder charge.* Doukas, an eye-witness, says it was of bronze, and Giacomo Tetaldi, also present, informs us it was cast in one piece (unlike many Ottoman bombards, such as the 'Dardanelles Gun' described under figure 173, which were made in two halves that screwed together). The sources inevitably differ on the weight of its shot: Tetaldi says 1,900 lbs and Niccolo Barbaro says 1,200 lbs, while Leonard of Chios records its stones as 11 palms in circumference (about 105 inches, therefore giving a diameter of about 33 inches which tallies fairly closely with the bore quoted by Kritovoulos). Others claim 12-15 palms. The Anconitan consul Benvenuto actually reported that it fired shot of 1,300, 600 *and* 300 lbs, though this may be a reference to the weights of shot fired by other guns in the same battery (see also below). On the other hand Chalkokondyles reports rather improbably that Urban's gun fired shot of little over 3 talents (elsewhere he even says 2), which, assuming that the Roman talent of 57.6 lbs is intended, is only about 175 lbs; bearing in mind the testament of other contemporary sources that this gun was 'a terrifying and extraordinary monster', the full absurdity of this statement becomes readily apparent. Chalkokondyles even adds that the two smaller guns in its battery fired shot of just *half* a talent, though Tetaldi records other Ottoman guns as firing shot of 800, 1,000 and 1,200 lbs, while Barbaro reports that of the remaining 11 principal guns used at the siege, one fired shot of 800 lbs and the rest fired shot of 2-500 lbs or less.

Further evidence of the sheer size of Urban's gun and others of its ilk can be found in the large numbers of men and beasts of burden required to assist in their transport. 'Their size was enormous', says Pseudo-Sphrantzes, who continues: 'Certain pieces of artillery could not be moved by the combined efforts of 40 or 50 pairs of oxen and 2,000 men.' We are told by Leonard of Chios that Urban's monster itself could barely be moved even by 150 yoke of oxen, while Doukas says of it that '30 wagons were linked together and 60 enormous oxen hauled it along. 200 men were deployed on each side of the cannon to support it so that it would not slip and fall onto the road, and 50 carpenters and 200 assistants went ahead of the wagons to construct wooden bridges wherever the road was uneven.' Chalkokondyles reports that 2 such guns were dragged from the foundry at Adrianople, each requiring 70 oxen and 1,000 men to move it. With this in mind, it comes as no real surprise to find that the Ottomans often overcame this mammoth logistics problem by the simple expedient of casting most of their guns on site, as at the Hexamilion in 1446, Kroya in 1450, Jacje in 1464†, Shkoder (Scutari) in 1478 and Rhodes in 1480 — Kritovoulos even claims that Urban's gun was cast before the walls of Constantinople, though this may refer to the even larger one Leonard of Chios says was ordered, but never completed, after the first had apparently blown up. Ottoman armies were therefore usually provided with supplies of bronze or copper and tin for this purpose. However, the practice declined after Mehmed II's reign, and it became more usual for the guns to be transported as described above on wagons called *'araba,* the responsibility for which had devolved onto a specialist unit called the *Top 'arabaci* ('Gun-carriage drivers') probably established by Murad II, or possibly by Mehmed II. Some modern authorities dispute anyway the likelihood of many guns having ever been cast on site, stating that the quality of the founding would not have been high if foundries had to be set up on such an ad hoc basis; but this view is not supported by the sources, in which there appear to be considerably less references to exploding guns than are to be found in contemporary Western chronicles. Admittedly Leonard of Chios states that Urban's gun burst, but that was a bombard of exceptional size, cast in the established gun-foundry at Adrianople anyway rather than on site. Chalkokondyles and Pseudo-Sphrantzes support his claim, the latter saying that 'on account of the constant firing and of the great impurity of the metal, the sultan's biggest cannon exploded into many fragments as it was being fired and dealt death and wounds to many.' (Pears puts Urban among the casualties, but on what authority is unclear.) The anonymous 'Slavic Chronicle', seemingly based on an eye-witness account of the siege, also confirms that this gun burst, but adds that it was repaired 3 days later. This probably explains how Barbaro could describe it still being used even at the final assault; Doukas too specifically states that the gun survived the siege and 'afterwards was preserved and continued to carry out the tyrant's will.' Indeed, some such 15th century bobmards were still in use even at the beginning of the 19th century!

Though a Genoese eye-witness, Montaldo, records 200 'guns and tormentia' in all, he is alone in attempting to guess at the exact number of guns used at the siege of Constantinople. Others, however, nevertheless pro-

*Such guns became almost commonplace amongst the Ottomans during the second half of the 15th century. There were 20 bombards 27 feet in length among those besieging Belgrade in 1456, while those on Rhodes in 1480 included 16 firing shot 9 palms (about 27 inches) in diameter. I have been unable to find any evidence for Urban's gun being called *Basilica,* as Oman claims it was.

†On this occasion, the siege having failed, the sultan subsequently 'ordered the cannon to be pulled to the River Vrbas near the city and to be thrown into the river', so as to avoid them falling into enemy hands. This would seem to indicate that facilities for their transport were not available.

vide a few useful details on how the Ottoman artillery was organised on this occasion. Barbaro tells us that the biggest guns were arranged in four batteries of 2, 3, 3 and 4 pieces, the last including Urban's monster (this battery therefore probably comprising the 4 guns firing shot of 800-1,900 lbs recorded by Tetaldi though, as we have already seen, Chalkokondyles says the battery including Urban's gun comprised only 3 in all). Pseudo-Sphrantzes claims that the Ottoman artillery concentrated its fire on 14 points in the defences, implying there were 14 batteries. Sir Charles Oman, seemingly confused and drawing on Edward Pears (who cites Sphrantzes as saying that there were 4 guns per battery, and Barbaro as saying there were 9 batteries — which they do not), claims these batteries comprised 9 that were each of 4 smaller bombards 'intended apparently rather for annoyance than for serious breaching', with the balance of the guns, including the heaviest, in the remaining 5.

The majority of the gunners were probably European renegades for the greater part of the 15th century, men like Urban and the German master-gunner Meister Georg Frapont who sited and commanded Mehmed's artillery at the siege of Rhodes. Indeed, Leonard of Chios says that the Ottoman engineers at Constantinople included Greeks, Latins, Germans, Hungarians and Bohemians, while Zorzi Dolfin, yet another eye-witness of the siege, describes how Mehmed 'hired German cannon-makers at a great fee to come where and when he wished, to cast cannon for him'. Contemporaries of the siege of Belgrade in 1456 similarly report that the Ottoman culverines there were manned by Germans, Hungarians, Bosnians and Dalmatians, and the big siege-guns by Germans and Italians. These would have all been elements of the unit known as the *Topcu ocaki* ('Ocak of the gunners'), established as part of the Qapu Khalqi by Murad II and divided into two distinct parts, comprising foundry and artillerists. Like the Top 'arabaci mentioned above, this unit was commanded by an Aga with the title of *bashi*, and was subdivided into ortas, presumably of about 50 men. The Topcu ocaki may have originally numbered 700 men, and the other unit was probably of similar size. Another unit apparently established at the same time and organised along identical lines was the *Humbaraciyan* or 'Mortar-men' (see page 10). Kritovoulos, however, would have us believe that the first use of mortars by the Ottomans took place only later, at the siege of Constantinople where, unable to fire directly on ships sheltering in the Golden Horn, Mehmed II is supposed to have suggested to his gun-founders that they should make 'a different sort of gun with a slightly changed design that could fire a stone to a great height, so that when it came down it would hit the ships and sink them.' Thereafter mortars occur at most major Ottoman sieges — there were 7 among the 300 guns at Belgrade, for instance, and 12 bronze examples appeared at Rhodes, firing 5 rounds a day.

Kritovoulos provides us with a rare insight into the firing procedure of gunners operating Urban's monster. He says: 'First they put into it that which is called powder, filling the chamber behind completely up to the mouth of the enlarged part of the bore, which is intended for the stone shot. Then they introduced a great stopper, a very strong plug of wood, which they batter down with iron rammers so that it shall closely confine the powder in such a way that only the force of the ignited powder can discharge it; then they placed the stone shot upon it, ramming this down forcefully so as to make it enter into the wooden plug and make a round cavity [i.e. the plug was concave in shape so as to accept the shot]. After this, having turned the cannon towards the target, and given it an angle of elevation according to the rules of their art and experience, they brought great beams of wood which they laid under it, and on top and on all sides, so that it might not be disturbed and strike wide of the mark as a result of the shock and the recoil. After all this, they applied the fire to the little orifice behind'. Doukas gives us an interesting additional detail, describing the procedure that was followed to determine the range: 'When he [the gunner] wished to discharge a large stone, he first took the range of the target by firing a small one and then, taking skilful aim, he would fire the large.' (This may provide an alternative explanation for Benvenuto's claim that the gun fired three weights of shot.) Bearing in mind all these preliminary operations, and the fact that the barrel needed to cool after each shot before a new powder charge could be inserted, it is no surprise to read in Chalkokondyles that the biggest gun fired only 7 times a day (and once at night). Guns at the siege of Shkoder fired at first only about 4 shots a day, and though their rate of fire steadily increased during the course of the siege 17-18 shots a day was the best day's average to be achieved for the period of the siege for which records exist, during which time a total of 2,534 shots were fired. This compares highly unfavourably with the 1,000 shots a day allegedly fired during the siege of Rhodes. On the other hand Tetaldi says of the siege of Constantinople that 'each day the cannon were fired between 100 and 120 times', presumably referring only to the 12 principal guns enumerated by Barbaro.

In closing on the subject, it should be noted that in addition to gunpowder artillery the Ottomans continued to use trebuchets at least as late as 1480, when they are much in evidence on both sides at the siege of Rhodes. Pseudo-Sphrantzes records of the final siege of Constantinople that the Ottoman trebuchets (of which there were at least a dozen within a week of the attack beginning) 'caused damage to many illustrious houses and

parts of the palace situated in the vicinty of the walls', referring elsewhere to the Turks 'demolishing parts of our walls, here and there, with their artillery and trebuchets'.

The Navy

The earliest Turkish fleets we read of in this period are none of them Ottoman, mostly originating instead from Umur Bey's amirates of Aydin and Smyrna, the latter of which had a Turkish naval tradition dating right back to the 1090s. In 1332 an Aydinian fleet of some 380 presumably small vessels and 40,000 men raided through the Archipelago and launched attacks on mainland Greece and the Morea, while in 1343 Umur allegedly fitted out a fleet of 250 or 300 'barges' to raid the coastal towns of South-East Europe, but Christian forces sank 50 of these at sea in 1344 and succeeded in burning the majority of the rest at anchor in the port of Smyrna. The initial appearance of the Ottomans on the naval scene commenced a decade later, with their seizure of the coastal amirate of Karasi in 1345 and the major naval base at Gallipoli in 1353, from which they henceforth launched occasional piratical forays involving fleets of only modest proportions. They failed to realise the full potential of maritime power until nearly a century later; the Ottoman chronicler Hajji Khalifa (d. 1657) observed that 'before the time of the late Sultan Mehmed II, the Ottomans had not ventured to undertake naval expeditions', though he had to confess that the need for a proper navy had been felt somewhat earlier, during Murad II's unsuccessful siege of Constantinople in 1422. This need was more than filled under Mehmed, whose fleet at the final siege of the city is variously estimated by most Greek and Italian observers as 240-500 vessels of various sizes, carrying 36,000 men according to Benvenuto; even the Ottoman sources claim 400 ships were present. The more reliable accounts tend to agree that of this total between 80 and 100 were proper warships — a mixture of triremes, biremes, galleys and *fustae* or *karabia* — with the rest made up of 'other small craft of various kinds'. The large ships at least were equipped with heavy guns, and probably the fustae carried light guns; certainly small, oar-propelled vessels in pictures from Guillaume Caoursin's printed account (1496) of the siege of Rhodes, and a contemporary woodcut of the Battle of Zonchio (1499), probably representing fustae, have swivel-guns mounted in the bows. In fact 15th century Turkish ships were recognised by the Venetians as being better-equipped with artillery than their own vessels.

Most Ottoman fleets recorded in the second half of the 15th century were of considerable dimensions if the sources are to be believed: 100 ships against Sinope in 1459; 300 against Negroponte in 1470; 300-380 against Kaffa in 1475, including 120 galleys; 40 galleys and 100 other vessels in the descent on Apulia in 1480; and 100 ships in the fleet used against Rhodes the same year, carrying 3,000 Janissaries and 5,000 'azabs according to Hajji Khalifa, who adds that 60 of the vessels were from Gallipoli. A detailed breakdown of the Ottoman fleet at Zonchio gives 60 triremes, 30 fustae, 3 *galeazze* ('great galleys'), 2 enormous round ships (see below), 18 smaller round ships, and 127 small supply vessels and the like, the whole fleet probably crewed by 37,000 men. The largest part of most fleets was therefore comprised of the smaller vessels and supply ships, but some at least were vessels of substantial size. Khalifa tells us that as early as c. 1460 Mehmed II 'built one of 3,000 tons, but as they were launching it, it sank in the harbour, and the builders were forced to flee.' He also provides us with a description of the largest Ottoman vessels at the Battle of Zonchio, which he says were 'two immense *kokas* [carracks], the length of each being 70 cubits and the breadth 30 cubits. The masts were of several trees joined together, and in the middle measured 4 cubits in circumference. The maintop was capable of holding 40 men in armour, who might thence discharge their arrows and handguns . . . These vessels had 2 decks, the one like that of a galleon, the other like that of a *mavuna* [trireme]; and on the other side of each of these, according to custom, were 2 port-holes, in which immense guns were placed. Along the upper deck was a netting under which on both sides were 24 oars, each pulled by 9 men. The sterns were like those of a galleon, and from them boats were suspended. Each of these ships contained 2,000 soldiers and sailors.' Marino Sanudo the Younger, a Venetian, adds that these ships were each of 1,800 tons (actually *botte,* therefore about 1,080 tons), though he says they carried only 1,000 men, mostly Janissaries.

The principal weakness of the Ottoman navy, so the sources repeatedly tell us, lay in the quality of its seamen, who are frequently dismissed disparagingly in the chronicles as 'Jews, Greeks and Turks'. Jacopo de Promontorio, a Genoese writing c.1475, says the Ottomans lacked 'reliable sailors', adding that their galleys were 'unfit for naval warfare' and that '4 such galleys manned by incompetent sailors are not worth one of ours.' Many Ottoman sailors were in fact 'pressed Greeks', whose seamanship the Italians had always held in very poor repute, and being Christians they were rarely entirely dependable — in 1499, for instance, 16,500 'azabs were taken aboard ship in Gallipoli and Constantinople in place of the usual Christian crews, whom it was feared would prove unfaithful in the forthcoming naval campaign against the Venetians. As a further indication of the extent to which Turkish vessels were crewed by Christians, it is interesting to note that in an engagement off Gallipoli in 1416 most of the oarsmen in the Ottoman ships were Genoese,

Catalans, Sicilians and Greeks. Doukas tells us that after the battle those 'whom the Turks had pressed into service' were freed by the Venetian victors, while 'all those who served for profit and gain they impaled on Tenedos.'

The latter category were probably mostly Genoese, these being somewhat less particular than the Venetians about what company they kept, while others were Catalans. Hired Genoese vessels were used as transports by the Ottomans on a number of occasions, such as in 1422, 1423 and — most perfidious of all — in 1444, when they transported Murad II's Anatolian army to Europe for one gold coin per man, to confront and defeat Hunyadi and King Vladislav at the Battle of Varna. Doukas supplies us with a full account of a Genoese-Ottoman combined operation dating to 1422, when 7 ships under Giovanni Adorno, *podesta* of the Genoese colony of Folia (New Phocaea) on the Anatolian coast, were supplied to ship Murad's troops to Gallipoli during the Ottoman civil war of 1421-23, these Genoese subsequently fighting alongside them against the pretender Mustafa. Adorno's own ship carried 800 'brave and heavily-armed Franks' according to Doukas, who also tells us that 500 Genoese crossbowmen and javelin-men were landed from 20 ships' boats to secure Murad's beachhead. After the main body of the Ottomans had been put ashore the Genoese 'took their positions on the front line of battle, and cleared the way with quarrels and gunshot.' The Genoese then accompanied Murad inland as far as Adrianople, their forces numbering 'more than 2,000 men, Italians in black armour and bearing lances, and bill-bearing foot-soldiers', commanded by their ships' captains. Idris al-Bitlis says that they received 5,000 ducats for their services. Ironically, it was Genoese ships too that had earlier transported Mustafa's own army across to Anatolia! (An even earlier instance of Genoese in Ottoman employ is to be found in a contemporary Florentine chronicle of the Battle of Kossovo in 1389, which records the presence of 5,000 Genoese, Greek and other Christian *balestrieri* in Murad I's army and attributes the Turkish victory there to them.)

It is no surprise, therefore, to find that most Turkish naval terminology, and probably organisation too, was based on that of the Genoese. The Ottomans' naval commander-in-chief was called the *Kapudan* or *Kaptan pasha* (from the Italian *capitano*), first appointed by Mehmed II in 1453 after the poor performance of the fleet at the siege of Constantinople (where at one point 4 Christian ships battled through a veritable sea of Turkish vessels, to reach the safety of harbour after a prolonged engagement in which the inferiority of Turkish seamanship was confirmed beyond reasonable doubt). The rank and title of sancak bey of Gallipoli went with this post. Ships' captains during this period were called *reis*, or kaptan or *hassa* reis in the case of the larger vessels; they received timars within the Kapudan pasha's sancak. Ottoman galleys were much the same as those of the Genoese and Venetians, and their crews likewise numbered about 200 men. In battle they carried troops in addition; at Zonchio, for instance, the galeazzes each carried 200 Janissaries.

One additional naval force worthy of notice was the Danube fleet, which played a vital role in Ottoman campaigns against Hungary, transporting many troops and most of the artillery. Based at Golubac and Krusevac, it could be of considerable proportions, allegedly 200 (but possibly as few as 60) light vessels being built to serve on the Danube during the siege of Belgrade in 1456. Another such river fleet was stationed on the Morava, Brocquière reporting that at the confluence of the Nissava and Morava (near Nish) 'the Turk usually keeps from 80 to 100 galleys, galliots, and rafts, to carry across his cavalry and army in time of war'. This fleet was guarded by 300 men even in peacetime, these being relieved every two months.

THE BYZANTINE EMPIRE

Numerically weak and unable any longer to effectively guard its borders, the Byzantine army was, by the 14th century, less than a shadow of its former self. The chronicler Gregoras observed that it had become the 'laughing stock of the world', comprised in 1329 'entirely of shopkeepers and artisans' whose one aim was to run away as quickly as possible. The anonymous 14th century 'patriot monk' of Magnesia wrote of Byzantine armies that: 'These were no longer the organised and well-disciplined armies of yore, but rather a rabble led by arrogant men who oppressed the people; they had forgotten their function as protectors. These leaders commanded nothing but disrespect. They were weak and effeminate in their behaviour, cowardly, stupid, licentious, insolent, dissolute, predatory, traitorous, reckless — men who pillaged the property of others and left fields, gardens, vineyards and forests desolate; men who knew only how to destroy those who were weaker than themselves'.

What there still was of the army was comprised largely of the *pronoia*-holding* aristorcracy (*dynatoi*) and their *paroikoi* or dependent peasants, plus a handful of regular troops and an ever-increasing number of

*The pronoia, or 'provision', was a grant of land. See *Armies and Enemies of the Crusades.*

mercenaries (see below). In addition military service was seemingly still owed by many towns and non-pronoia-holding *archontes*, though more and more of both these categories were exempted from these obligations as time went by. Pronoia-holders provided the officer class, but it should be noted that the chroniclers tended to use the words pronoia and sometimes *economia* indiscriminately both for the grants of large estates held by the aristocracy and court officials, and for the simple military holdings of the older thematic sort that each supported just one soldier. The latter type, generally called an economia, was held directly from, and 'at the pleasure of', the government, and had been the principal means of maintaining the native element of the army since the mid-13th century. At the beginning of the 14th century, under Andronikos II (1282-1328), such grants still remained very much in use, but were declining in importance as more and more were abandoned under increasing Turkish pressure. In an effort to stem the decline these smallholdings were made hereditary in the mid-14th century, but the pronoia-system nevertheless continued to collapse as territorial losses mounted. Following the decisive defeat of the Serbs on the River Marica in 1365, one final attempt was made by John V in 1367 to strengthen the Empire's reserve of native soldiers by the confiscation of half of all monastic lands between Constantinople and Selymbria for their conversion to pronoiai; however, the Emperor's will was not as strong as that of the Church, and the plan had to be abandoned. Following Vukashin's defeat at Cernomen in 1371, however, John's son Manuel did manage to appropriate half of the monastic estates in his own despotate of Thessalonika for this same purpose (see page 30).

The remnants of the regular army were in an equally sorry state of decline. We know that c.1320 Andronikos II had planned to utilise part of the revenue from a severe new tax to pay for 3,000 (additional?) regular cavalry, of whom 1,000 were to be based in Bithynia and 2,000 in Macedonia and Thrace, but his intentions eventually went unfulfilled (largely because of a civil war that broke out between he and his grandson, Andronikos III). Andronikos II's government could not even afford the maintenance of those soldiers it already employed, and we are told that they were billeted on the frontier towns, obliging the householders to provide them with food and wine, and their horses with provender, at prices fixed by a commission, for which they received recompense at increasingly irregular intervals when the soldiers were eventually paid. John VI Cantacuzene, previously the Grand Domestic (from 1321), attempted some reforms on the death of Andronikos III in 1341. He strengthened the frontier garrisons and insisted that the treasury paid them punctually, and in addition managed for a while to enforce the obligatory service of all pronoia-holders, many of whom had for some time been receiving unwarranted exemptions. Most of his reforms, however, were rendered redundant by the civil wars of 1341-56. At the beginning of the conflict his own army comprised 16 *allaghia* which, assuming 500 men per *allaghion**, implies some 8,000 men, of whom we know many were Frankish (i.e. Western European) mercenaries. This number declined to 2,000 in 1342 as Cantacuzene's fortunes reached a low ebb, and of these allegedly as many as 1,500 died of an epidemic contracted during the siege of Serres. He still only had 1,000 men of his own on his entry into Constantinople in 1347.

The steady decline in the number of native soldiers throughout the late-13th and early-14th centuries was compensated by a parallel increase in the size of the foreign contingents that had always been found in Byzantine armies. George Pachymeres' contemporary chronicle even says that Andronikos II preferred foreign troops, stating that in his employ they were predominantly Gazmouloi, Cretans, Alani, Turks and Turkopouloi. Of these the Alani were deemed to be 'the best cavalry there is in the East', according to the Catalan chronicler Ramon Muntaner, and they were paid twice as much as the best native troops; about 16,000 of them (including their wives and families) were employed in 1301, being settled in Thrace as military colonists, but finding their Byzantine officers effeminate they soon dispersed into three separate bodies and began to pillage friend and foe alike. After the Byzantine campaigns alongside, and then against, the Catalan Company we do not hear of the Alani again (see page 27). Turks in Byzantine employ, however, progressively increased in numbers throughout the first half of the 14th century. Andronikos III and John Cantacuzene had 2,000 supplied by Umur Bey of Aydin for their Albanian campaign of 1337, and it was Umur again who led 6,000 Turks (in some 200 small ships) to support Cantacuzene in 1343, and apparently another 5,000 in 1345. After Umur's death in 1348 Cantacuzene turned more to the Ottomans, Sultan Orkhan having already provided 5,500 men in 1346; 10,000 were provided in 1348, allegedly 20,000 in 1349 (to retake Thessalonika from the Serbs), and 10-12,000 under Orkhan's son Suleiman Pasha in 1352; this last group defeated his rival John V's Serbian and Bulgarian allies at Didymoteichos, for which in 1352 Suleiman was given as a reward the fortress of Tzympe, which he had captured, near Gallipoli, the first permanent Ottoman possession in Europe, Gallipoli itself being captured by them the next year after an

*See *Armies and Enemies of the Crusades,* also below, page 30. By the 14th century the allaghion had become the standard unit of Byzantine organisation. It was commanded by an *allagator*, a term to be found surviving as *lagator* in the Balkans even in the 15th century, where it nevertheless only seems to have denoted an officer commanding perhaps as few as 10-20 men.

earthquake. During the same civil wars Empress Anna (Anne of Savoy, John V's mother) received 6,000 Turks from Saruhan of Magnesia in 1346, Doukas wrongly describing this contingent as 10,000 Ottomans. Cantacuzene himself neatly summed up one of the major problems of employing such large numbers of Turkish auxiliaries, which was that since they 'were too numerous for the Romans [i.e., the Byzantines] to control, they went into action on their own initiative whenever there was the chance of booty.' More significantly, however, the Turks had thereby gained a foothold in Europe.

Other foreign elements in 14th century Byzantine armies included Bulgarians (2,000 in Philes Palaeologus' forces in 1311, for instance, and 1,000 sent by Voivode Balik in 1346 to support Anne of Savoy against Cantacuzene); Serbs (Michael IX had the loan of 2,000 cavalry in 1312, Cantacuzene was supported by Serbian troops 1342-43, and John V was provided with 4,000 cavalry by Stephen Dushan in 1352); and Wallachians (recorded in Michael IX's forces 1305-7). In fact Wallachians continued to be found in Byzantine employ even in the 15th century — Doukas records the presence of Wallachian mercenaries in Constantinople during Murad II's siege of 1422, and the future voivode Vlad Dracul was even 'an officer of the army' of John VIII.

Small numbers of Western European mercenaries also continued to appear in Byzantine employ in the 14th-15th centuries, and on two occasions large bodies of European troops rescued the Empire from particularly sticky situations. The first was a force of 15 ships and probably 1,500-1,900 men under Count Amadeo of Savoy (called the Green Count), which brought succour to John V in 1366-67, when it spent much of its time fighting the Bulgarians. The second was a French expedition, that of Jean le Meingre, Marshal Boucicault (who was later to be captured by the English at Agincourt). In 1399, during Bayezid I's prolonged blockade of Constantinople, he answered Byzantine appeals for aid with an army of 600 men-at-arms, 600 varlets and 1,000 archers, receiving the title of Grand Constable; he had no horses with him according to one authority, but the fleet that brought him to the city included 3 *galées huissières* (horse-transports), though admittedly they could not have carried more than 150-200 horses. On his departure with Manuel II at the end of the year (for it was he who persuaded the Emperor to make a personal appeal for military help throughout the courts of Europe) Boucicault left behind his lieutenant, Jean de Châteaumorand, with 100 men-at-arms, 100 varlets and 'a quantity of bowmen', who remained for a further 3 years, until September 1402. Interestingly, correspondence from John VII to King Henry IV in June of that year mentions that some English soldiers were also active in Constantinople's defence. Similar small troops of Western Europeans continued to enter Byzantine service right up to the fall of the Empire in 1453.

Guard units

By the end of the 13th century most of the old Imperial guard units had been relegated to ceremonial or palace duties. The 14th century 'De Officiis' (Book of Offices) of Pseudo-Codinus, for instance, records that the Vardariotes preceded the Emperor with staves and whips during processions. Other units it lists were the Kortinarioi, who erected the Emperor's tent; the bow-armed Mourtatoi; the Tzakones, oarsmen in the Emperor's personal galley; the Paramonai, divided into two allaghia, one of cavalry and one of infantry; and the English 'Varangian Guard'. According to Pseudo-Codinus the Varangians were responsible for guarding the Emperor's office and chief reception chambers in the Blachernae palace, where they stood around his throne during receptions. They also accompanied him when he attended church in state. Outside of these palace duties, however, the once elite Varangians no longer performed any military function, and the extent of their decline is apparent from the fact that whereas their commander had originally walked immediately behind the Emperor in procession, by the 14th century he had fallen to *fiftieth* in precedence. Sources other than Pseudo-Codinus also make occasional references to the Varangians: Cantacuzene wrote that 'the so-called Varangians with their axes' were present at the coronation of Andronikos III in 1316; they are mentioned again in 1328 and 1330, and in 1341 Cantacuzene established a palace guard of 500 men plus 'as many axe-bearing barbarians as were then in service' to protect John V. Axe-bearing soldiers 'of British race' are referred to by Byzantine envoys in Rome as late as 1404, and it is certainly possible that the English men-at-arms referred to in 1402 were similarly Varangians, which would seem to indicate that they were used in defence of the city even if they no longer served in field-armies.

By the mid-14th century, however, the Varangians had declined in importance to a point where it seems to have become necessary to recruit another foreign guard unit to inherit at least some of their guard duties. This unit was comprised of Catalans and Aragonese, whom the Byzantines generally called Katelanoi. Catalans are first recorded in Byzantine employ as early as 1279, during the campaign leading up to the Battle of Negroponte, and of course in 1302 Andronikos II had employed considerable numbers in the form of Roger de Flor's Grand Company (see pages 26-28), and even after the murder of de Flor and attempted dissolution of the Company in 1305 one element, under Jimenez d'Arenós, re-entered Byzantine service

following open hostility between rival factions of the survivors in 1307. We know nothing about their subsequent career, and it is not until 1351 that Catalans again enter the limelight. In that year the Catalans, as allies of Venice, found themselves fighting on the side of the Byzantines against the Genoese, and February of the next year saw a naval battle in the Bosphorus in which the Byzantine fleet of 68-70 galleys included 25 that were Aragonese. After the departure of the fleet, more than 300 Catalans stayed on as mercenaries according to Cantacuzene, while Nikephoros Gregoras reports that Cantacuzene armed and organised 500 Catalans as a personal bodyguard because he did not trust his own people. Their leader was a certain Juan Peralta, who significantly had been in Cantacuzene's service since 1342, which would indicate that Catalans had continued to appear in Byzantine armies throughout the first half of the 14th century. In 1352 Cantacuzene's Catalan troops, along with Suleiman Pasha's Turks, took part in the relief (and looting) of Adrianople, besieged by John V. Thereafter their numbers seemingly declined, Gregoras reporting that the number of Catalan guardsmen in the palace in 1354 was only about 100, these garrisoning the Golden Gate fortress, Blachernae and other palace districts. After defending the Golden Gate against John V, this short-lived guard unit seems to have been dismissed at the end of the civil war that same year.

The very last group of foreign soldiers to perform guard functions within the Empire appears to have been comprised of Cretans, who probably rose to this position early in the 15th century. Doukas, writing of 1422, when they were guarding the Gate of Blachernae, records that: 'The Cretans were the most faithful subjects of the Empire, distinguished by their sacred zeal for protecting the holy churches and their relics, and for the dignity of the Emperor and the prestige of the City.' It is noteworthy that Sphrantzes travelled to Mistra on a Cretan ship in 1444, and in 1452 Venice specifically gave the Emperor permission to recruit Cretan soldiers and sailors (a privilege denied to others, including even the Hospitallers of Rhodes), and there were 3 shiploads of Cretan soldiers at the final siege of Constantinople the next year, one of which showed such tenacity in its defence of the towers of Basileios, Leon and Alexios on the sea-wall near the Porta Horaea (on the Golden Horn) that they earnt the respect of the Ottomans, who according to Pseudo-Sphrantzes allowed them to depart unmolested with their arms and property. A Cretan account records all 3 ships to have returned safely to Crete under their commanders Sgouros, Hyalinas and Philommatos (significantly all Greek rather than Italian names, which indicates that these were Greek natives of Crete rather than Venetian colonists). Sgouros and Philommatos are probably Barbaro's 'Guro de Candia' and 'Antonio Filamati de Candia'; however, he records the third Cretan commander as 'Zuan Venier de Candia'. Philommatos was probably the Antonio mistakenly recorded by Pseudo-Sphrantzes as commanding the squadron at the boom (see naval section below). Barbaro records Venier, Filamati and another Cretan to have escaped with their ships after the fall of the city, but also lists Venier among the dead. The third escapee was probably Antonios Hyalinas, who had commanded the vessel on which Sphrantzes travelled in 1444, since such a man is apparently reported two years later in 1455; it was probably his ship and crew that were allowed to depart after their stubborn defence of the sea-wall.

In addition to such foreigners a small native Byzantine guard may have survived until the very last days of the Empire. During the siege of 1453 Leonard of Chios mentions that the Emperor fought alongside 'picked Greek troops', Doukas refers to how Giustiniani fought at the head of his own men 'and the palace troops', and Kritovoulos says that Constantine made his last stand with a 'Roman bodyguard'. All these references are admittedly vague, and if they denote anything more than a few close retainers can probably be taken to indicate a vestige of the Paramonai.

The Imperial high command

The mid-14th century 'Book of Offices' of Pseudo-Codinus gives us a full list of the Empire's court hierarchy, from which the following information is principally drawn. However, it should be noted that this source gives 'a picture of what the outward appearance of the Empire still contrived to present rather than the melancholy reality within'.* Therefore although all of the posts listed did indeed exist, many of them indicated the degree of favour with which their holders were regarded by the Emperor rather than any special military competence — so much so, in fact, that although the posts listed here are all of the senior military and naval commands, many armies were actually commanded in the field by the holders of non-military court posts, such as the *protovestiarios* (the Imperial treasurer), the *mesazon* (court mediator) and even the *pinkernes* (the Imperial butler).

In descending order of rank, the Empire's senior military and naval field officers during the 14th-15th centuries were probably as follows:

*W. Ensslin in the *Cambridge Medieval History,* volume IV.

Grand Domestic (*Megas Domestikos*) — Commander-in-chief of the army after the Emperor.
Grand Duke (*Megas Dux*) — Commander of the Imperial navy. This title was often purely honorary, as when conferred on foreigners.
Protostrator — The Grand Domestic's deputy, in effect the Marshal.
Grand Stratopedarch (*Megas Stratopedarches*) — Responsible for the commissariat.
Grand *Primmikerios* — Commander of the Imperial retinue.
Grand Constable (*Megas Konostablos*) — Commander of the Western European mercenaries.
Grand *Dhoungarius* of the Watch.
Grand *Hetaereiarchos* — Commander of mercenary elements of the army.
Domestic of the *Scholae* — Originally the pre-eminent military post, but seemingly no more than ceremonial by this time.
Grand Dhoungarius of the Fleet — The Grand Duke's deputy.
Protospatharios — Another virtually obsolete post, originally commander of the Emperor's sword-bearers.
Grand Archon — Originally commander of the Imperial retinue, now deputy to the Grand Primmikerios.
Grand *Tzaousios* — A sort of sergeant-at-arms for the Imperial retinue with responsibilities for court ceremony. The term derives from Turkish *tchaouch* or *cavus*.
Skouterios — Imperial standard-bearer.
Admiral (*Amyriales*) — Third-in-command of the navy.
Acolyte (*Akolouthos*) — Commander of the Varangian guardsmen.
Archon of the Allaghion — By this time deputy of the Grand Archon, but originally commander of the Imperial retinue.
Protallagator — Commander of the Paramonai. After the establishment of the despotate of the Morea there was a Protallagator there too.
Domestic of the Walls — Responsible for the defences of Constantinople.
Hetaereiarchos — Deputy of the Grand Hetaereiarchos.
Stratopedarch of the *Mourtatoi* — Commander of the bow-armed guardsmen of the same name.
Stratopedarch of the Tzakones — Commander of the oarsmen of the Emperor's personal galley.
Stratopedarch of the *Monokaballoi* — Commander of the 'Cavalrymen with one horse'. Pseudo-Codinus also mentions cavalrymen with 2 and 3 horses in this part of his text.
Stratopedarch of the *Tzangratoroi* — Commander of the crossbowmen. It is possibly men of his command that we find armed with crossbows at the final siege. Alternatively, like the French 'Master of the Crossbowmen' he may have been responsible for all of the army's infantry.
Premier Count — Another naval officer.

The 15th century: the end of the Byzantine Empire

The series of civil wars that plagued the Empire in the 1370s and 1380s left the field wide open for Ottoman expansion in the Balkans, where piece by piece the Turks were able to gradually cut all lines of communication by land between Constantinople and Western Europe. Under considerable pressure — and with her armed forces dwindling to the point where most of the armies and navies involved in her domestic squabbles were provided by Turks, Venetians and Genoese — it was only a matter of time until the Empire had to make its formal submission to the Ottomans. Chalkokondyles refers to a treaty being made between John V and the Turks as early as 1362. Probably a formal treaty was drawn up with Murad I in 1372/3, by which Byzantium became a tributary state of the Ottoman Empire; certainly John V and his army accompanied an Ottoman expedition in Anatolia in the spring of 1373. In 1379 John agreed to pay an increased tribute and to provide a contingent of Byzantine troops to the sultan every spring. The figure of 12,000 men given for this contingent in one source is pure fantasy; Doukas, seemingly recording a renewal of the treaty between John and Bayezid I in 1389, gives the true size of this auxiliary contingent as just *100* men — adequate testimony of the Empire's military potential by this date, when Serbia was expected to provide ten times that figure. Doukas continues: 'More than once Emperor Manuel [II] was sent by his father Emperor John [V] with 100 armed Roman troops, to campaign in the service of Bayezid when he was fighting against the Turks in Pamphylia.' In 1390 Manuel even had to lead a Byzantine contingent at the Ottoman siege and capture of Philadelphia, the last free Byzantine city in Anatolia. Small wonder, then, that during this campaign of 1390-91 he should write that 'one thing is unbearable for us: we fight with [the Turks] and for them, and this means that we increase their strength and decrease our own.'

Repeated Byzantine appeals to Europe for financial and military aid, even when made in person throughout the courts of Europe as was done by Manuel in 1399-1403, tended to fall on ears deafened by religious discord (Europe being Catholic while the Empire was Orthodox), and even when this particular problem was nominally overcome by the unpopular Union of 1439, little help was forthcoming from the West. The Empire contracted yet further, until Bertrandon de la Brocquière, visiting Constantinople in 1433, observed

that it extended no more than 2-days' ride from the city walls. Pero Tafur a few years later (1437) noted in addition that for its defence the city 'had but few men'; indeed, there is good reason to suppose that by the time of Mehmed II's siege in 1453 its regular army probably comprised no more than 1,000-1,500 men.

For the final defence of the city that year a garrison of some 7-9,000 men was raised, of which 4,773* were Byzantines according to George Sphrantzes, who took a census of them on the Emperor's orders at the beginning of the siege. The balance (Sphrantzes says '200', clearly an error for 2,000) were foreigners, chiefly Genoese and Venetians as we shall see, but also including others. The Anconitan consul Benvenuto wrote that the defenders numbered 7,000 in all, under 300 *provisiores.* Jacopo Tetaldi similarly put the garrison at 6-7,000 fighting men 'and not more', and Doukas reckoned no more than 8,000. Leonard of Chios, like Benvenuto and Tetaldi an eye-witness, put the number of Byzantine defenders as 'at the most 6,000', plus 'hardly as many as 3,000' Italians — 'Genoese, Venetians and those who had come secretly to help from Pera [Galata]'. Genoese Galata was technically neutral during the siege, but a letter sent to Genoa by Lomellino, its podesta, confirms that he 'sent to the defence of the city all the mercenaries from Chios [probably Catalans] and all those who had been sent from Genoa, and a great number of the citizens and burghers from here, with . . . members of my own establishment.' Doukas too mentions the presence of 'many armed men from the suburb of Galata', who served on a sort of rota basis, changing over at night, to prevent the Turks from noticing that too many men were missing from Galata itself at any one time. (The Turks were not fooled, however, since Pseudo-Sphrantzes records that after the fall of the city Mehmed 'despatched men to Galata, who arrested and executed many individuals.')

The principal Genoese element amongst the defenders in 1453 was that of Giovanni Giustiniani Longo, who though only granted the rank of Protostrator† by the Emperor was effectively in command of the city's defence. He arrived with a force of 2 large ships carrying 700 men (according to Barbaro) equipped and raised at his own expense, some of them from Chios and Rhodes 'and that part of the sea'. All the other contemporary accounts give lower figures: the 'Slavic Chronicle' says 600 men, for instance, while Leonard says 400, Chalkokondyles 300, Benvenuto 400, and Pseudo-Sphrantzes 300 (though he later records Giustiniani commanding '400 Italian and Roman soldiers'). Even Barbaro, having given the figure of 700, later records the defenders of the Gate of St Romanus, where Giustiniani was posted, as '300 fully-armed men in good order, all foreigners with not a Greek among them . . and these 300 men had with them some good cannon and good [hand?] guns and a large number of crossbows and other equipment.' The discrepancy of 3-400 men can probably be put down to the fact that most of the chroniclers counted only the soldiers and failed to include in their figures the seamen who provided the crews of Giustiniani's ships, which would have almost certainly numbered 3-400 men. Kritovoulos actually says that Giustiniani's force comprised '400 men in full armour [*kataphraktoi*], not counting the rest of the ships' crews', and even he later refers to them numbering only 300 men when drawn up on the city walls. Those raised or hired in Rhodes and Chios possibly included Greeks, while some at least were quite probably Catalan mercenaries (110 of Mytilene's 500 defenders in 1462 were Catalans from Chios). Also amongst his cosmopolitan company was a military engineer named John or Johannes Grant, called a German by Pseudo-Sphrantzes but according to Runciman possibly a Scot.

There were in addition Genoese contingents other than that of Giustiniani, and the names of many of their commanders are recorded in the chronicles; among them were Paolo, Antonio and Troilo Bocchiardo, Giacomo Coco, Bartolomeo Soligo, Maurizio Cattaneo, and Geronimo and Leonardo di Langasco. Pseudo-Sphrantzes also mentions an otherwise unknown Genoese named Manuel defending the fortress of the Golden Gate with '200 archers and crossbowmen'.

The Venetian contribution to the city's defence comprised 3 merchant galleys and 2 light galleys, each of these two groups being commanded by a captain, Alviso Diedo and Gabriele Trevisiano respectively. Barbaro records that these ships landed 1,000 men to assist in the defence of the walls: 'The master of each galley went with the crew of his galley, their banners before them, and the Captains of the galleys went ahead of the masters.' In overall command of the Venetians was their bailli in Constantinople, Girolamo Minotto, while other prominent leaders included Filippo and Jacobi Contarini, Zaccaria Grioni, Lodovico and Antonio Bembo and Teodoro Caristo ('the best archer on earth'). Another prominent Italian contingent was

*This figure is misquoted in many sources: Gibbon gives 4,970, Runciman 4,983, Charles Diehl and J. F. C. Fuller 4,973, and Margaret Klopf 4,793.

†This is according to Doukas. Others say Nikephoros Palaeologus was Protostrator. Either way, the holder of this post curiously played a more prominent part in the defence of the city than did the Grand Domestic, Andronikos Cantacuzene, to whom the Protostrator was technically deputy.

that led by Cardinal Isidore, which included the chronicler Leonard of Chios, bishop of Mytilene. It comprised 200 men, including handgunners and crossbowmen, of whom according to Doukas 50 were Italians (actually Neapolitans) and the rest were 'hired for pay' from amongst the 'Latins' of Chios, the money having been provided by the pope. Other foreign elements amongst the defenders included resident Catalans under their consul, Péré Julia, who were joined by a number of Catalan seamen. There was even a small Turkish contingent present, under the exiled Ottoman prince Orkhan, grandson of Sultan Suleiman I (1402-10); Barbaro tells us he was 'in the pay of the Emperor' and that during the siege he guarded 'one of the quarters of the city on the seaward side with the Turks in his pay'.

Of the native Byzantine soldiers who fought in Constantinople's defence in 1453 we know surprisingly little other than the names of their leaders — men like the Grand Duke Loukas Notaras, the Grand Domestic Andronikos Cantacuzene, Nikephoros and Theophilos Palaeologus, Demetrios and John Cantacuzene and John Dalmata. Pseudo-Sphrantzes says that Nikephoros and Demetrios commanded a mobile reserve of 700 men to 'assist wherever reinforcements were needed', while Doukas refers to how 'the Grand Duke patrolled the city' with a similar force of 500 (or 'about 500') men, which would seem from Barbaro's account to have included 100 cavalrymen. It may also have included mobile artillery, or so we may suppose from Pseudo-Sphrantzes' account of an argument between Notaras and Giustiniani when the latter 'asked for the transfer of some pieces of artillery from the district guarded by the Grand Duke to his own area.' According to Mihailovic the Emperor himself led a reserve of 1,000 infantry after the Turks had broken into the city, while Barbaro says he was accompanied by 'a great part of his barons and knights'.

Artillery

The exact date of the introduction of gunpowder artillery in the Byzantine Empire is unknown, but there is apparently some evidence that John VII used cannons against John V in the fortress of the Golden Gate in 1390. Certainly it seems likely that guns had been introduced into the Empire by the end of the 14th century, doubtless under Genoese or Venetian influence. Most of the sources refer to Byzantine artillery during the final siege, though there was seemingly not enough of it. Leonard of Chios says that the guns could not be used often because of a shortage of powder and shot, and that the largest could not be used anyway because of the damage their recoil caused to the ancient walls. Chalkokondyles too says that the Byzantine guns shook the walls badly, though he records their shot as weighing only 1½ talents — about 90 lbs if, as seems probable, the Roman talent of 57.6 lbs was adopted in Byzantium; certainly Leonard states that the talent was 60 *minae*, i.e. nearly 60 lbs. Compared to the guns of the Ottoman besiegers, therefore, these were only modest pieces of ordnance. Chalkokondyles adds that the largest Byzantine cannon actually burst, upon which the unfortunate cannoneer responsible was accused of being a Turkish agent, narrowly escaping execution only because there was no evidence to support the accusation.

Doukas provides us with details of the smallest Byzantine firearms, which were clearly handguns. He describes how 'the decision was made . . . that the Romans should fight from the ramparts of the walls, some by discharging quarrels from crossbows and others by shooting arrows. Some, however, shot lead balls which were propelled by powder, 5 and 10 at a time, and as small as Pontic walnuts [i.e. hazelnuts]. These had tremendous penetrating power and, if a ball happened to strike an armoured soldier, it would transpierce both shield and body, passing through and striking the next person standing in its path. Passing through the second individual, it would strike a third until the force of the powder was dissipated. Thus with one shot it was possible to kill 2 or 3 soldiers. The Turks learned of these weapons and not only employed them but had even better ones.' In his account of Murad II's siege of Belgrade in 1440 he describes the use of this same type of weapon by the Hungarian garrison in even fuller detail: 'They shot lead balls the size of a Pontic walnut from a bronze apparatus whose tube held the balls in a row of 5 or 10. The back end of the bronze tube was filled with powder compounded of natron, sulphur and salicaceous charcoal. When a burning ember or flaming spark came into contact with this powder, it suddenly ignited, thereby compressing the air. The compressed air, of necessity, compels the balls, and as they are driven forward the ball next to the powder impels the one ahead of it, and the latter impels the one ahead of it — in this way, the explosive force is transmitted to the ball at the mouth . . . When the ball strikes man or beast, even though they are clad in mail, the force of the shot is so overwhelming that it pierces the mail and flesh of both rider and horse without being spent or dissipated.' Perhaps, then, this type of gun worked on the Roman candle principle and was comparable to, and possibly the same as, the contemporary European 'fire-lance'. (See Funcken's *The Age of Chivalry, Part 2,* figures 10 and 10a plus captions, pages 32-34.)

Byzantine terminology for gunpowder artillery is varied and confused. Kritovoulos, writing in 1467, admitted of the cannon that 'our old language has no word to designate this machine unless you choose to call it *elipolos* ['taker of cities'] or *apheterhion* ['bolt-compelling']. In current language nowadays all the world

gives it the name *skevos* [machine or apparatus].' Indeed, that is the term Doukas uses on several occasions. This absence of any appropriate new Greek words led to both the adoption of those used in the West — *khoneian* and *khanonia*, both presumably derived from 'cannon', and *boumbardhe* — and the revival of antiquated names once used for torsion-operated stone-throwing engines, such as *petrobolos* and *telebolos*. These two latter terms were in fact probably the most popular, being used by Doukas, Sphrantzes and Chalkokondyles alike.

The Navy

Soon after the accession to the throne in 1282 of Andronikos II the Byzantine navy, totalling at that time some 80 ships, had been disbanded and most of its seamen, comprised chiefly of Gazmouloi (half-castes of mixed Byzantine and Western European parentage), made redundant. This situation remained unchanged for nearly half a century, until Andronikos III re-established the navy and re-employed the Gazmouloi following his grandfather's abdication in 1328. However, although the Byzantines were then able, as early as 1332, to enter into a naval league with Venice and the Papacy against the Turks, to which they agreed to supply 10 galleys, the Byzantine navy was never again to achieve its former greatness. For instance, although Gregoras reports that a fleet of about 100 ships was raised during the war of 1348-49 against the Genoese, only 9 were large warships, and some of the rest were equipped and armed at the expense of wealthy citizens and crewed by 'labourers and navvies'; little wonder, then, that most of this fleet was literally abandoned to the Genoese without a fight. Cantacuzene later claimed to have increased Byzantine naval potential to some 200 ships in all, both merchant vessels and warships, but if there is any truth at all in this statement, which is doubtful since he provided only 9 or 10 galleys to an allied Veneto-Catalan fleet in 1352, it is unlikely that many of the warships were Byzantine. Significantly we usually read of a maximum of only 10 Byzantine galleys appearing on any single occasion thereafter, such as during negotiations between Sigismund of Hungary and Manuel II prior to the Nicopolis crusade of 1396, and in 1421 when Manuel sent 'a fleet of 10 triremes' to assist the Ottoman pretender Mustafa against Murad II.

At the final siege 10 Byzantine galleys are again mentioned (quite probably the same 10), out of a total fleet of 26-39 vessels of which the balance were principally Italian. Barbaro, whose account is almost certainly the most accurate, tells us that of these the 10 largest (5 Genoese, 3 Cretan, 1 Anconitan and 1 Byzantine) were drawn up along the boom between the Porta Horaea and Galata, while in the Golden Horn were 17 square-rigged ships, 3 merchant galleys from Tana (a Venetian port at the mouth of the Don, modern Azov), 2 light galleys from Venice, and 5 unarmed Byzantine galleys. Some other ships, presumably including the 4 remaining Byzantine galleys, were disarmed and scuttled. Other sources refer to a Catalan galley and a Provençal galley being present, while Giacomo Tetaldi says the allied fleet comprised 30 nefs and 9 galleys, these latter made up of the 5 Venetian galleys plus '3 belonging to the Emperor and one to *messire* Giovanni Giustiniani Longo'. These were joined somewhat later by an Imperial transport accompanied by 3 Byzantine-hired Genoese galleys from Chios, which broke through the Turkish blockade. The Italian vessels at least were equipped with artillery, for Pseudo-Sphrantzes tells us that the crews of the ships along the boom, therefore presumably including the one Imperial galley stationed there, 'daily challenged the Turkish fleet with trumpets, drums, and countless calls; there was exchange of artillery fire every day, but no major action.'

The Byzantine despotate of the Morea also had a modest fleet, established by Manuel Cantacuzene soon after his appointment as Despot in the mid-14th century. In 1427 it defeated the superior fleet of Charles Tocco, Count of Cephalonia, in the Battle of the Echinades, the last recorded Byzantine naval victory. In 1460 the despot Thomas Palaeologus escaped from the Peloponnesus in two 50-oared galleys, doubtless the last vestiges of the Moreote fleet.

THE EMPIRE OF TREBIZOND

After Nicaea and Epiros, Trebizond (ancient Trapezus) was the third major fragment of the Byzantine Empire to survive the Latin conquest of 1204, being established by Alexios Komnenos with the aid of Georgian troops during the confusion that followed the fall of Constantinople that year. Despite vigorous expansion Trebizond remained something of a backwater, the least significant of the Byzantine successor-states, and its armed forces were accordingly small. The survival of the state depended more on its geography and diplomacy than on military strength, with the Trapezuntine Emperors (styled 'Grand Komnenoi') adroitly fending off the Turks by a policy of marital alliances that successfully kept the Ottomans from their doorstep until as late as the second half of the 15th century. One Ottoman attack was beaten off in 1442, and in 1456 another was bought off by payment of a heavy tribute, but in 1461, after a 21-day siege and several engagements before the city walls, Trebizond finally surrendered to a massive Ottoman army that Kritovoulos records was composed of 60,000 horse and 80,000 foot.

The Empire was organised in traditional Byzantine fashion into 7 *banda*, comprising from west to east Trikomia, Palaiomatzouka, Matzouka, Trebizond, Gemora, Sourmaina and Rhizaion, plus the *thema* of Greater Lazia. Smallholders of *bandon* lands were called by various military terms such as *strategoi, phylakes, stratiotoi* and so on, which makes it seem likely that the bandons individually provided for their own defence. Greco-Laz frontier lords likewise defended the Pontic passes with their own castles and garrisons (the latter described by travellers as 'brigands and evil folk'), at first of their own volition but by the late-14th century as an 'obligation' performed in exchange for governmental recognition of their lands as pronoiai. At court level, the central military establishment was comprised of the Grand Domestic (later the *Pansebastos*), Grand Constable, Protostrator, *Polemarchos* (later the Grand Stratopedarch), and the Grand Duke. Beneath this outward Byzantine veneer, however, Eastern influence predominated, evidenced by the use of such terms as *amirkandarios* and *hourchi* in place of protospatharios and akolouthos, the latter in addition significantly carrying a bow before the Emperor in procession. Significantly too, Ruy Gonzalez de Clavijo in 1404 described how Trapezuntine soldiers used 'the sword and bow, the like of what arms the Turks employ, and they ride after the fashion of these last.' (See also figures 61 and 62.) Indeed, it is likely that the majority of the Empire's armed forces was made up of Turkish and native elements, the latter comprised chiefly of *Tzannoi* (in fact actually Laz, a Georgian people which wholly absorbed the Tzans in the 14th century). These latter were probably the responsibility of the office of Grand Constable, a post actually held for much of this period by a Laz family with the surname of Tzanichites. Many of them were settled in Greater Lazia, which Anthony Bryer describes rather nicely as 'a sort of Laz tribal reservation'.

As already mentioned, the Empire's forces were always small — hardly surprising when its total population probably comprised no more than 250,000, even Trebizond itself possibly having a population of only 4,000 by 1438. The contingent of troops that it had been obliged to provide to the Seljuks in the 13th century is said by the traveller Simon de Saint-Quentin to have numbered only '200 lances', and most 14th century armies appear to have similarly been counted only in hundreds. In 1355 the loss of 50 or 400 men (accounts differ) in combat with the Turks at Cheriana was counted a major disaster; in another engagement, near Marmara in 1370, the Grand Komnenos Alexios III was accompanied only by 'some few men' — in fact just 100 cavalry; and in 1380 he is recorded as having 'divided his army into two parts', comprising 600 infantry in the one part and 'the cavalry and another very large party of infantry' in the other. In fact the very largest Trapezuntine army on record, dating to 1366, comprised a grand total of just 2,000 cavalry and infantry. Admittedly Sanudo in the mid-15th century put Trapezuntine strength at 25,000 cavalry, or 15,000 in the event of a campaign beyond the frontier, and Ludovico da Bologna in 1459-60 put it at 20,000, but neither of these can be considered in any way reliable. What the Trapezuntines lacked in numbers they made up for in tenacity; an account of c. 1350 (al-Umari) confirms that they were 'warlike men and fearless', adding of the Grand Komnenos' army that 'although few in number and ill-equipped, [they] are however heroes, like terrible lions who never let their prey escape.'

Further troops might be obtained from the Empire's various Turkish and Georgian allies, many of them actually related to the Trapezuntine Imperial family by marriage. In 1404 Clavijo records Manuel III's four main 'vassals' as comprising his nephew Altamur, once amir of Limnia but now ruling over Boona and St Nikias in Chalybia, 'master of over 10,000 horsemen'; his son-in-law Suleiman Bey, amir of Chalybia; Melesianos of Oinaion, with a mixed population of Pontic Greeks and Turks; and Leon II Kabazites, principal of the frontier lords mentioned earlier, who ruled the Armenian frontier from his fortress at Sigana and who told Clavijo that he 'had continually to defend himself against the Turks who were his neighbours on all sides'. A defensive league against the Ottomans proposed by Ludovico da Bologna lists an even grander array of potentates in alliance with Trebizond, comprising the following: Uzun Hasan, chief of the Aq-Qoyunlu (White Sheep Turks), married to the Grand Komnenos David's niece, with 50,000 men; David's brother-in-law George VIII, King of Georgia, with 60,000 men; Qwarqware II of Akhaltsikh, a Georgian, later ruler of Zamtche (Greater Lazia), with 20,000 cavalry; *Dadian* (Duke) Liparit I of Mingrelia (another Georgian) and his son (Chaman-Dawle?), with 60,000; Rabia, the Georgian prince of Abkhazia in Armenia, with his brother, barons and 30,000 men; Bagrat of Imeretia and Mamia of Guria, both Georgians; Dardebech (?) 'Lord of Lesser Armenia' (Cilicia, therefore probably the amir of Adana), with 10,000 or 20,000 men; and 'the nation of the Giths [Djiks or Circassians] and Alani' who promised 'to fight under the banner of George, the king of the Georgians.' The sizes of their contingents of men are clearly exaggerated, but it seems likely that if they were all divided by 10 they might then not be far from the truth (the same also applying to Ludovico's figure of 30 galleys and 20,000 men for the Trapezuntines themselves). This League was also to have included the Grand Karaman Ibrahim Bey, and Ismael Isfendiyaroglu Bey of Sinope, amir of Kastamonu. Interestingly, the forces of the latter, whose territory was invaded by Mehmed II during the same campaign that saw the fall of Trebizond, are recorded to have been made up of 400 'large and small' guns crewed by 2,000 men (or 400 guns and 2,000 handgunners as Finlay would have it) plus

10,000 men armed with the traditional Turkish combination of spear, bow, sword and mace. This may imply that Trebizond too had artillery by the mid-15th century, though it does not appear in any of the sources.

The Navy

In a country where the sea was both the principal line of communication and one of, if not the principal invasion route of its enemies, it is no surprise to find that Trebizond maintained a permanent navy, last mentioned in 1437. It was of modest proportions, however, usually comprising only 2-3 large warships plus smaller vessels which were requisitioned as and when required; for example, a fleet recorded in 1355 had just one warship and 11 smaller vessels, and another in 1379 had '2 great warships and 2 boats'. Excepting Ludovico's unlikely figure of 30 galleys, the largest number of ships recorded was in 1402, when Tamerlane demanded that Manuel III should provide the service of 20 galleys for use against the Ottomans, though he never did and — as we have seen — probably never could have. (However, it *is* quite likely that there was a Trapezuntine contingent in Tamerlane's army at the Battle of Ankara, even though it is not mentioned by contemporaries.) Command of the navy was in the hands of the Grand Duke, the last known holder of this post actually being described as the *amyriales* or admiral in 1396. The Venetian and more especially the Genoese colonies established in Trebizond also occasionally involved themselves in the Empire's naval activities.

The 2 or 3 Imperial warships were of a type called a *katergon* or *bucca*, a large vessel of probably 4-600 tons with 2 lateen-rigged masts and sometimes oars, capable of transporting 3-600 men (the size of the Trapezuntine fleet therefore providing further proof — if it were needed — of the smallness of the army). Other types of vessel were the *barka* or *karabion*, i.e. the cog, a one-masted sailing ship; the *galea* or galley, not much used on the Black Sea by the Trapezuntines; and assorted small fishing and rowing boats called *griparion*, *paraskalmion* and *xylarion*. As many as 40 *xylaria* are recorded to have accompanied a Trapezuntine fleet in 1372.

GREECE

In this period Greece was still much as it had been for the duration of the 13th century (i.e. since the infamous Fourth Crusade), comprising a complex of independent, semi-independent and often mutually hostile lordships, fiefs and petty states which, for the most part, changed masters with remarkable frequency until all and sundry ultimately succumbed to the Ottoman Turks. At the beginning of this period the country could be divided up roughly as follows: the Franks (i.e. Western Europeans) held the principality of Achaea and the duchy of Athens; the Venetians held Negroponte (Euboea) and assorted coastal towns and castles, and they, the Genoese, and other Italians held the islands of the Aegean; and the Byzantines held all the rest, comprising Thrace, Macedonia and Laconia, with independent Byzantine governments in Thessaly and Epiros. The irruption onto the scene of the Catalan Company in the early part of the 14th century resulted in the long term in an overall weakening of the Frankish position, which at the same time opened up considerable opportunities for the Serbs and Byzantines. With the death in 1318 of the lord of Thessaly (John II Doukas, *Sebastokrator* of Neopatras) the central government annexed part of his lands, conquering the rest (with the exception of the southern portion, held by the Catalans) in 1333. Epiros too was recovered for the Empire by force in 1340 and its last despot deposed*, and gradual absorption of Achaea's fragmented and strife-torn territory commenced towards the end of the 14th century. In the course of the first half of the 15th century the Byzantine despots of the Morea steadily stripped the declining principality of its possessions until, in 1433, the despot Thomas Palaeologus actually became Prince of Achaea; the whole of the Morea, with the exception of just a handful of Venetian possessions, had by then reverted to Byzantine control. However, the Ottomans too had not been slow to take advantage of the same internal weakness that had benefited the Byzantines, and as early as 1387 Thessalonika had been captured (though it was held for only a few years) and Thessaly was overrun between 1393 and 1394; Neopatras fell in 1394 and Trikkala (capital of a Serbian despotate until the 1380s) fell in 1395, while in 1397 an extended Turkish razzia took the Ottoman commander in Greece, Evrenos Bey, as far south as the Venetian ports of Coron and Modon. Permanent conquest by the Turks followed in the 15th century: Thessalonika and Ioannina were taken in 1430, Arta (once the capital of Epiros) in 1449, Athens in 1456, Byzantine Morea in 1460, and the islands

*This was Nikephoros II Orsini. The despotate subsequently fell to the Serbians under Dushan, from whom Nikephoros retook it, together with Thessaly, in 1355, only to be killed in the Battle of Achelous against the Albanians in 1358. The Serbian and Albanian conquests in Greece in the 14th century added yet one more ingredient to the ethnic chaos which by now prevailed throughout the Balkans, succinctly summarised by one Byzantine chronicler's description of a certain Vonko, who conquered the despotate of Arta in 1400, as a *Servalvanitovoulgarovlachos* — i.e. a Serbo-Albanian-Bulgarian-Vlach!

of Lesbos in 1462, Negroponte in 1470, and Cephalonia and Leucadia (Leukas) in 1479. The Venetians managed to retain Naupaktos (Lepanto) until 1499, Modon and Coron until 1500, and the fortress of Monemvasia until as late as 1540, but with these few exceptions, plus Venetian Tenos (held until 1715) and the so-called duchy of Naxos (which, though tributary, remained in Italian hands until 1566), Ottoman rule prevailed unchallenged throughout Greece and the Aegean before the 15th century had drawn to a close. It only remains for us to consider some of the more important of these Frankish and Byzantine states in slightly greater detail.

The principality of Achaea

The feudal organisation of Achaea is set out in the so-called Assizes of Romania, assembled in the mid-14th century (the *Cambridge Medieval History* says c. 1322). These record the existence of about a dozen baronies in the prince's own seignory in the 13th century, each owing service for between 4 and 24 knights' fiefs; 7 ecclesiastical fiefs owing service for 4 knights' fiefs each (except for the archbishopric of Patras, which owed service for 8); many smaller fiefs owing the service of a single knight or esquire; and the possessions of the Military Orders (Teutonic Knights, Templars and Hospitallers), owing service for 4 knights' fiefs each. Military service in all cases where multiple fiefs were held was based on the holding of 4 knights' fiefs, which was obliged to field 14 men comprised of the vassal (probably a banneret), one other knight and 12 esquires; for each additional knight's fief held over and above 4, one extra knight or 2 extra esquires had to be provided. (These terms of service clearly still held good even in the 14th century when Kalamata, one of the original 12 baronies, is recorded fulfilling its military obligations in 1342 by the service of a knight and 14 esquires.) All fief-holders were liable to 4 months' service in the field and, 'if the lord wishes', an additional 4 months on garrison duty, while service might even be called for in the remaining third of the year too; things may have relaxed slightly by the beginning of the 14th century, but an enfeoffment of 1303 still calls for 6 months' service. This was ordinarily required within 15 days of a summons being issued unless the prince or one of his castles was being besieged, in which case service was required as soon as possible. Evidence of the uncertain internal condition of the Frankish states in Greece can be found in the stipulation that military service reduced proportionately to any reduction in the size of a fief through enemy action. All in all the prince's seignory owed him the service of 5-600 men-at-arms, and in the early-14th century this feudal cavalry of Achaea was reckoned by contemporaries to be the very best that there was to be found anywhere. Senior feudal officers were the Constable (or Grand Constable) and the Marshal.

In addition to his own seignory the prince was also feudal overlord of most of the rest of Frankish Greece, notably the duchies of Athens and the Archipelago, the county of Cephalonia, and the island of Negroponte, which between them could field a substantial number of troops; an indication of their cumulative military potential can be found in the army fielded by Walter (Gautier) de Brienne, Duke of Athens, at Kephissos in 1311, which comprised 2,000 cavalry and 4,000 infantry according to the 'Aragonese Chronicle of the Morea', including the lords of Salona, Boudonitza, Damala, Tenos and Gardiki, and troops from Achaea, Naxos, Negroponte, Cephalonia and Leucadia. Nikephoros Gregoras even records that there were 6,400 horse and 8,000 foot, while Ramón Muntaner says that there were 700 knights. By the late-14th century Achaea's major fiefs nominally included the duchies of Athens, the Archipelago and Leucadia; the marquisate of Boudonitza; the counties of Cephalonia and Salona; the lordships of Arcadia and Chalandritza; the triarchs of Negroponte; and the archbishopric of Patras and bishoprics of Modon, Coron, and Olena. However, this list, drawn up in 1391, gives a false illusion of the principality's importance, since the prince had no more than a hollow claim to overlordship of many of the feudatories listed. Indeed, many of the greater baronies in Achaea proper were by now in the hands of Navarrese adventurers (see below, page 28), who hoped to have their possession of these fiefs confirmed in exchange for recognising the pretender Amadeo of Savoy as prince. A few years later their possession was legalised instead by their leader, Pierre Bordo de Saint Superan, himself becoming prince (1398-1402) — the penultimate Frankish ruler of Achaea before the principality was reconquered by the Byzantines.

The indigenous population, Greek and Slav alike, provided another source of troops. Milengi Slav spearmen and archers were hired by the prince in 1296, while in 1302 Guy II (Guyot) de la Roche, Duke of Athens, raised an army for 3 months' service against the despotate of Epiros that, in addition to 900 Frankish men-at-arms, included 6,000 Thessalian and Bulgar cavalry under 18 Greek *archontes* and 'a good 30,000 infantry' chiefly of Greek and Slav extraction. Muntaner similarly records that Duke Walter's army at Kephissos included 24,000 Greek infantry, while others record that, like the Catalan army it faced, it included some Turks.

The Catalan Company

The infamous 'Grand Company of Catalans' had originally been raised in 1281 by Pere III of Aragon

(1276-85) to fight the Angevins in the so-called War of the Sicilian Vespers. This ended with the Peace of Caltabellotta in 1301, by which time the company's commander was a certain Rutger von Blum, better-known to posterity as Roger de Flor, described by a Florentine chronicler as 'the father of all *condottieri*'. (For the condottieri, see *Armies of the Middle Ages, volume 1*, pages 34-39.) He was in fact an apostasized Templar sergeant who had made his fame and fortune at the fall of Acre to the Mamluks in 1291, where he had commandeered one of the Order's galleys and charged exorbitant prices for passage to the safety of Cyprus. After a brief career in piracy as captain of a Genoese ship he had subsequently joined up with the mercenary forces of Frederick III of Aragon in Sicily, becoming in time commander of the Grand Company. When the Company was made redundant in 1301, he succeeded in extorting considerable privileges from the Byzantine Emperor, Andronikos II, in exchange for the promise of its service against the Turks. Byzantine sources record the strength of the Company as 2-8,000 men when it sailed for Constantinople in 1302, while the more reliable Ramón Muntaner, de Flor's secretary, reports that they comprised 36 ships carrying 1,500 cavalry (mainly Catalans), 4,000 *Almughavari* (see figure 58) and 1,000 other infantry. This total does not include the seamen, who may account for the difference between the Byzantine chronicler Pachymeres' 8,000 and Muntaner's 6,500. (Pachymeres records the size of de Flor's fleet as only 18 galleys and 4 'great ships'; since Genoa supplied a number of his vessels this figure may represent only those that were his own — certainly in 1307 Muntaner mentions that the Company had 24 ships.) Either way, by the spring of 1303 the Catalan Company numbered about 6,000 men, reinforced at the end of the year by a further 2-300 cavalry and 1,000 Almughavari under Bernard de Rocafort.

On his arrival in Constantinople de Flor was created Grand Duke by the Emperor, this being one of the terms of their agreement, and, following a bloody street-fight with the city's Genoese community, the Company was promptly shipped over to Anatolia for a campaign against the Turks. They were joined by a large force of Byzantine-employed Alani (16,000 — including their families — of whom all but 1,000 abandoned the army after the Almughavari had a bloody argument with them too), plus a small Byzantine contingent under a certain Marulles, probably only a few hundred-strong. Under de Flor's command this small force inflicted a series of crushing defeats on the Turkish amirs of Saruhan ('Sarkan', as Muntaner calls him), Aydin, Menteshe and Karaman, killing over 50,000 (if Muntaner's figures are to be believed) in engagements at Cyzicus, Philadelphia, Tira, Ania and the Iron Gates. Unfortunately, however, these successes and others the next year went to de Flor's head, and in time he became openly hostile to Andronikos, seeing himself as potential ruler of a suzerain Byzantine state which he had plans to carve out for himself in Anatolia. Despite his elevation to the rank of Caesar on his return to Europe an official request to reduce the strength of his Company to 3,000 men was therefore ignored. A growing distrust and dislike between the two parties, Byzantine and Catalan, culminated eventually in the assassination of Roger de Flor in Adrianople in 1305 by Andronikos' son and co-Emperor, Michael IX. There ensued a pre-arranged massacre of as many of the Company as could be reached, 2,300 or more of them being hunted down and killed; Muntaner records that their numbers at Gallipoli, where they were based, were reduced to just 3,307 men. By the end of May this had been reduced yet further by the loss of many men and ships in an engagement against the Genoese, leaving just 17 ships (plus some smaller vessels), 1,256 Almughavari and 206 horsemen, including Rocafort and just 5 other captains. However, these were soon reinforced by a large number of Turkopouloi and Turks (deserters from the Byzantine army) — 800 or 1,800 horse and 2,000 foot are mentioned — plus, later, Catalan and Aragonese reinforcements, including 500 men-at-arms under Berenguer d'Entenza.

Eventually, in 1308, internal dissension (which resulted in the death, among many others, of d'Entenza) obliged the Company to abandon Gallipoli and split up. Before long a power struggle within the ranks of the largest element (8-9,000 men including some 3,000 Turks) resulted in a change of the Company's commander from Rocafort to Thibaut de Cepoy. In the face of growing Byzantine resistance to their depredatory raids, de Cepoy led them down into Thessaly, where he subsequently abandoned them and command devolved into the hands of a committee of 2 knights, an *adalid* and an *almocaden**, backed up by a pseudo-democratic Council of Twelve. For 6 months in 1310 they were employed in their old capacity as a mercenary company by Walter de Brienne, Duke of Athens, who utilised their services against the Sebastokrator of Neopatras, John II Doukas, from whom they captured more than 30 castles. Once peace was concluded, however, Duke Walter made the mistake of trying to dismiss the Catalans without pay, merely granting lands to the best 500 of them (200 horse and 300 foot). Understandably the Catalans were

*These were corruptions of Arabic terms meaning 'guide' and 'commander' respectively. Among the Almughavari the latter was distinguished by a pennon on his lance and appears to have commanded 50 men. The adalid was senior to the almocaden and sometimes fought mounted.

not prepared to leave it at that, and events culminated in the decisive battle of Kephissos in 1311 where the Athenian army was crushed and Duke Walter killed.

As a result of this victory the Company took over the entire duchy, thereafter generally referring to itself as 'The Fortunate Army of the Franks in Romania' or by some variant form such as 'The Company of the Franks residing in the duchies of Athens and Neopatras'. They invited the royal house of Sicily to provide them with a duke, and a sequence of 8 absentee Aragonese dukes ensued (1312-88). All of the duchy's senior military posts continued to be held by Catalans throughout that period, with the Marshal of the Duchy (later called the Marshal of Athens and Neopatras) as the most senior, the most famous being Roger de Lluria. (This office was discontinued after the 1360s, the Marshal's powers being assumed by the duchy's chief administrator, the Vicar-General.) Other senior officers were the captains, vicars (*veguers*) and castellans of Athens, Thebes (the capital), Livadia, Siderocastron, Neopatras (overrun after the Sebastokrator John II's death in 1318) and Salona (the latter 3 had only captains and castellans). The vicars had originally been the deputies or lieutenants of the duchy's feudal lords, but in the Catalan era they were effectively the regional governors and leaders of the local militia, holding the post for a maximum of 3 years. In fact the offices of captain and vicar were effectively the same and were often held by the same man, who might also be castellan. Others of the Company's original captains became the holders of the fiefs (and wives) of the Frankish aristocracy killed at Kephissos, but none of these were elevated to the baronage.

The duchy's armed forces thereafter were a mixed bag. Inevitably the greater part was of Catalans, but there were in addition many Greeks, Turks and Albanians. We have already seen that a considerable number of Turks had joined with the Catalan Company even before it had occupied the duchy, and the practice was never abandoned. In 1318, for example, it was planned that 1,000-1,500 should be hired from Anatolia, and in 1359 the absentee duke, King Frederick III of Sicily, requested that the duchy should send him 25 Turkish archers; in 1363 Roger de Lluria even admitted the Turks into Thebes (from whence he subsequently had to drive them by force in 1365). 'Schismatics and Turks' are frequently referred to in the anti-Catalan propaganda of the period, the former being a reference to the Greek element to be found in their forces. Some of these were pressed into service, while others had been taken captive as children and then reared as soldiers or servants, a practice the Catalans had seemingly copied from the Turks (see Alfonso Lowe's *The Catalan Vengeance,* pages 120 and 161). The Greeks seem to have been employed as archers, and we are told that the Catalans favoured those from the Peloponnese. The Albanians only became important in the last part of the Catalan duchy's existence, as many as 1,500 cavalry under a certain 'Count' Demetrios being recorded in 1381. These fought for the Catalans against the so-called Navarrese Company in 1379-80. (Another group of Albanians rising to fame at much the same date were those under Ghin Boua Spata, despot of Arta, who with support from the Serbian despot of Ioannina defeated a Hospitaller expeditionary force under the Grand Master Juan Fernández de Heredia in 1378.)

It should be noted that even after the collapse of the Catalan duchy of Athens described below, Catalans remained active throughout the Aegean and parts of Greece even in the 15th century, usually in the form of mercenaries and pirate galleys hired by various lords to serve in their territorial squabbles. They are often to be found fighting both for and against the Byzantines of the Morea, and some even fought alongside Constantine XI at the final siege of Constantinople.

The Navarrese Company

These Gascon and Navarrese mercenaries, some of them the same as had fought for Charles the Bad of Navarre against the king of France until 1366, came to Greece under Charles' brother Louis d'Evreux, who had a claim to the 'kingdom' of Albania and the city of Durazzo through marriage. They probably started arriving in Albania soon after the country had fallen to Charles Thopia in 1368 (see page 54), but the principal elements were only assembled in 1375-76, during which period alone 1,000 took ship, Charles the Bad himself supplying 100 men-at-arms. The 'Navarrese Company' was therefore actually composed of many smaller companies, as was usually the case with such mercenary bodies (for the organisation of which see volume 1, pages 18-20). Two years after Louis' death in 1376 this large company broke up, and individual elements were employed for their own ends by the other Frankish powers of Greece. Principal captains of the Navarrese from this time on were Jean de Urtubia Esquire and Sir Mahiot de Coquerel (whose personal units respectively comprised 50 and 30 men-at-arms in 1375, and 100 and 50 in 1378). The largest part of them, under de Coquerel, Pierre Bordo de Saint Superan and Berard de Varvassa, was employed by Jacques de Baux, claimant to the title of prince of Achaea, and overran the principality in his name (but really for themselves). Pierre Bordo (Pierre 'the Bastard') even became Vicar of Achaea 1386-91, and then prince 1396-1402, after whom there was only one more prince of Achaea (Centurione II Zaccaria) before the principality fell to the despots of the Morea in 1430.

In 1379 the rest of the company (made up of Navarrese, Gascons and Italians in roughly equal numbers, whereas de Coquerel's band had been chiefly Gascons) invaded the Catalan duchy of Athens — specifically Boeotia and Attica — under Urtubia, where they were reinforced by disaffected Catalans and Greeks and even some Hospitallers. Urtubia captured Thebes in 1379 and Livadia in 1381, thus unintentionally paving the way for the conquest of the duchy between 1385 and 1388 by Nerio Acciajuoli, the Florentine lord of Corinth who in 1384/5 could muster 70 lances and 800 Albanian cavalry, plus 'many foot'. (The Navarrese, now his enemies, could by this time muster 'up to 1,300 horse'.) Nerio died in 1394 and by the terms of his will control ('protection') of the duchy was effectively assigned to the Republic of Venice, though the true heir was his daughter, married to Carlo Tocco, count of Cephalonia and Leucadia. In 1395 the Venetians placed a garrison of 2 officers and 20 archers or crossbowmen in the castle of the Acropolis (the Castel de Cetines, or Castrum Athenarum, as it was known to the Franks), and in 1402 the raising of a force of 250-350 cavalry, plus other archers and infantry, was authorised by Venice. In fact the Venetian bailli of Negroponte led as many as 6,000 men against Nerio's son Antonio, so Chalkokondyles tells us, but he defeated them with just two small units of 300 men in an ambush in a mountain pass and, returning to his siege of Athens, captured the city at the very beginning of 1403.

Thereafter the duchy remained in Florentine hands until its capture in 1456 by the Ottoman Turks (to whom Nerio had paid tribute since 1394). In 1460 Franco Acciajuoli, the last Duke of Athens, was obliged to provide troops for the Ottomans against the count of Cephalonia and seemingly against the despotate of the Morea too, and then, towards the end of the year, he was murdered on the orders of Sultan Mehmed II.

After 1394 the Navarrese, like their predecessors, employed Turkish auxiliaries in considerable numbers.

The Morea

The origins of the Byzantine despotate of Mistra are to be found in the defeat of the despotate of Epiros' Frankish allies at the Battle of Kastoria (1259) by Michael Palaeologus of Nicaea, as a result of which Epiros was reduced to its former size and to Nicaean suzerainty. Terms for the release of prisoners taken in the battle led, in 1261, to the surrender to the central Byzantine government of the important Frankish fortresses of Mistra, Monemvasia and Maina, which thereafter were to provide the cornerstones of the Byzantine reconquest of the Morea. Initially the province was ruled by military governors appointed from Constantinople, who vigorously enlarged its territories, especially under Andronikos Palaeologus Asen (c. 1315-21), and many lesser Frankish lords became Greek subjects, holding important military posts and fighting in the despotate's armies. In 1349 the Morea effectively became a semi-autonomous despotate under Emperor John VI Cantacuzene's son Manuel, who reigned there until 1380.

A chronicle of 1320-21 mentions the Moreote army as comprising 36,000 men, which though not impossible is certainly unlikely. What forces there were probably disappeared before the establishment of the new dynasty anyway; certainly Manuel started out in Mistra with just a bodyguard force of 300 cavalry, plus a small number of Albanian mercenaries (here mentioned for the first time) hired from the Albanian despotate of Acarnania. His successor Theodore I let about 10,000 Albanians settle in 'numerous' military colonies in the Pelopponese in the 1390s, probably on the same terms as those the Venetians allowed to settle in Argos in 1397, i.e. probably in exchange for the military service of the head of each household. It was these Albanians who, to quote Peter Topping, 'enabled the Byzantines to complete the absorption of the Latin state [of Achaea] by 1430.' They seem to have fought in small units under their own chiefs (bands of 100 or 200 are mentioned in the campaign against Centurione II Zaccaria of Achaea in 1417). Later, in 1453, as many as 30,000* Albanians revolted under Peter Boua the Lame, a figure which gives some indication of their importance in the Moreote army. Venetian documents make it clear that their speciality was watching and guarding passes against Ottoman inroads.

In addition to Albanians, Turkish auxiliaries were also, inevitably, to be found in Moreote armies. In 1385 Theodore I is recorded with 'at least 200 horse and many foot and even Turks', and more were employed for his attack on Corinth in 1395. Sphrantzes reports that Despot Demetrios of Mesembria ravaged the suburbs of Constantinople in 1442 with an army that was 'supported by Turkish troops', and that the Albanian revolt of 1453 was crushed with the support of Turahan Bey.

*The Venetians of neighbouring Messenia (Navarino) in Arcadia also employed Albanians in large numbers. In 1425, for example, they permitted two independent bands to settle, one of 500 men and the other of 5,000, each under its own chieftain.

As the territory of the despotate increased, so its army grew. Niccolò da Martoni, who visited Greece in 1394-95, says that at the siege of Corinth in the latter year Theodore had 'a great army' of 20,000 men, of whom 3,000 cavalry were captured by the 40,000 Turkish auxiliaries of Carlo I Tocco, count of Cephalonia. In 1417 the joint-despots John (later Emperor John VIII) and Theodore II marched against Centurione with 10,000 cavalry and 5,000 infantry. One somewhat over-imaginative chronicler wrote in 1437 that the Pelopponese comprised 30 large towns, 200 forts and 400 villages, governed by the Emperor John's three brothers (Theodore II, 1428-43; Thomas, 1428-60; and Constantine [XI], 1423-48), who he claims could field *half a million* cavalry, a figure which at least confirms the contemporary view that the Moreote army could indeed field a considerable number of men. Jean Torzelo wrote in 1439 that 'the seignory of the Morea' could field 15,000 men, while Mihailovic records the despot Demetrios having 6,000 cavalry with him in 1458. The Byzantine (i.e. non-Albanian) elements of these armies were raised by the granting of fiefs (pronoiai) in exchange for military service as in other parts of the Empire, and were probably still organised in allaghia ('3,000' men according to the 'Chronicle of the Morea', judging from other evidence an exaggeration for 300; units of 300 men are mentioned twice in 1445, for instance, and we have already seen that Manuel's troop in 1349 numbered 300).

However, despite its impressive size and its undeniable success in siege operations, the Moreote army was unimpressive on the battlefield and is usually recorded fleeing in rout, seemingly through inadequate training leading to poor morale. Despot Thomas' army in 1459, for instance, was drawn up in such a close and inflexible array that the Ottoman commander facing him — recognising the incompetence of the Byzantine formation for what it was — simply launched an attack against one of its flanks, which threw the entire army into utter confusion and routed it, the rest being so crowded together as to be unable to come to the aid of the threatened flank. Only 200 men remained in the field with the despot.

Some Frankish soldiers were still to be found in Moreote armies even in the last decades of the despotate's existence: in 1445, for instance, 300 Burgundians were sent to assist Despot Constantine, while in 1459 200 Italian mercenaries provided by Pope Pius II, and another 100 provided by the Duchess of Milan, accompanied Despot Thomas' forces in an attack on Patras and Kalavryta.

The despotate was finally overrun by the Turks in 1460. However, in 1463 Venice managed to briefly recapture much of the Morea and several Aegean islands from the Ottomans, but her army, comprised of 5,000 infantry and 1,500 men-at-arms and mounted crossbowmen in 1463, subsequently reinforced by nearly 4,000 more men under the condottiere Sigismondo Malatesta, was decisively defeated in the spring of 1464. Malatesta himself was recalled at the beginning of 1466, and Venetian forces in the Morea were thereafter steadily reduced. The republic's last Moreote possessions were Modon and Coron (finally lost in 1500), and Nauplia and Monemvasia, which were ceded to the Ottoman Empire as late as 1540.

Thessalonika

Together with Chalkidike this strong city had remained in Byzantine hands since its recapture from the Franks in 1224, which had ended the shortlived kingdom of Thessalonika. After the mid-14th century, when Ottoman conquests cut it off from Constantinople, the city depended principally on the strength of its massive walls for defence, its armed forces being very small. In 1371 it proved necessary to convert half the property of the monasteries of Mount Athos and Thessalonika into pronoiai and to tax the rest in order to strengthen the city's defences, but in 1384 its governor (and so-called Emperor) Manuel II, son of Emperor John V, could still put only 100 horsemen in the field according to one source (though this was not his entire strength), and the next year he found it necessary to request 70 mercenary crossbowmen and 200 suits of armour from Venice to assist in Thessalonika's defence. The Ottomans captured the city in 1387, holding it until 1403, when it was returned to the Byzantines. Its last governors were the future Emperor John VII (1403-8), Demetrios Leontares (1408-15) and one of Manuel II's sons, Andronikos Palaeologus (1415-23).

Thessalonika was besieged continuously by the Ottomans from 1422 to 1430 and, unable to adequately defend it, in 1423 Andronikos ceded the city to Venice. The Venetians put in a garrison which numbered 700 crossbowmen in 1426, in addition to which they usually landed the crews of any of their galleys that happened to be anchored in the harbour — 5 of them in 1426, and 3 in 1430. In the latter year, which finally saw the fall of the city to the Turks, Doukas reported that its defenders were outnumbered 100 to 1, with 'barely one crossbowman to cover 10 turrets'. From another source we know that one element of the Venetian garrison on this occasion was comprised of a sinister band of cut-throat mercenaries referred to as the *Getarii*, who were sprinkled among the citizens and native militia with orders to cut down anyone unwise enough to express a desire to surrender. Although artillery is reported to have been used by the Ottomans in their attack, there seems to be no record of its use by the defenders.

THE REPUBLIC OF VENICE

Following an attempted insurrection in 1310 and the consequent establishment of the Council of Ten, it was decreed that henceforth some 630 soldiers were to be permanently maintained for the protection of the republic, comprised of 100 to patrol the lagoon and canals in small boats; 30 to guard the Doge's Palace; 200, specially selected by the heads of the city's 6 *sestieri* (quarters), to guard the Piazza di San Marco; and 10 to patrol each *contrade* (parish), of which there were 30 at that time. The arms of many of these were stored in an armoury in the palace, for which the Council of Ten was responsible, and many of the 2,000 weapons still in the armoury today carry the initials 'CX' (Council of Ten). This Council was also responsible for Venice's sophisticated spy network, which in time embraced all of Europe and much of the Mediterranean sphere of Islam.

In addition to the above, each of the sestieri was also required to permanently have 1,500 men in readiness to meet any emergency, when half were to muster in the piazza while the other half remained behind to guard its own *sestiere.* In the case of a general levy, Venice could raise the best-trained and largest infantry militia in all of Italy, a census of 1336 indicating that the city could call on the service of 40,100 able-bodied men between 20-60 years of age. These were organised into *duodene* of 12 men, from each of which one man would be chosen by lot for active service, the others contributing to his expenses. If the need should arise a second man, and sometimes even a third, would be similarly chosen to join the first, while under dire circumstances up to 3 men might be required from each *duodena* from the outset, as for service against Genoa in 1350 and 1378. The duration of such service was apparently entirely at the discretion of the Council of Ten: for example, the Venetian fleet defeated at Pola in 1379 had been at sea for a whole year and had twice been refused permission to return home. Though its strength was at least halved by the Black Death in 1348 (when three-fifths of Venice's population died), this form of militia organisation remained in existence until the end of the 15th century, by which time some of its members were included amongst the *provisionati,* a body of regularly paid professional infantry. The militias of Venice's mainland possessions (*Terraferma*), constituting the shortlived *provisionati di San Marco,* could theoretically themselves field 15-20,000 men by 1477, each major city being expected to field 500 in 1478. Normally, however, militia contingents, where they accompanied land-armies, tended to be utilised in the capacity of pioneers. The one exception to this, in the period up to about 1440, was the occasional contribution of small detachments of crossbowmen, usually only 1-300 men and at the most about 7-800, organised in companies of 25 men each commanded by a nobleman.

Other than this militia, in the course of the 14th century Venice came to possess no native land army, tending to rely instead on mercenaries or allied contingents. From the late-14th century onward the republic began to employ more and more of the former, so that by 1404 it could field 9,000 cavalry and 10,000 infantry against Verona and Padua. Its first attempt at maintaining a small standing force (250 lances) in 1402 was shortlived, but in 1406 a permanent force of 500 lances (plus some infantry) was approved by the Senate, Taddeo dal Verme being appointed its captain-general with his own *condotta* of 100 lances and 100 infantry. 8-900 lances were taken into permanent employ in 1413 following a war against the Hungarians, and though this number had declined to about 400 by 1422, the employment of some 400 more was authorised that year and the standing army was increased to 1,000 lances and 3,000 infantry by 1425 and 3,000 cavalry were being maintained by the end of 1426. Wartime demands frequently saw Venetian armies of 20-30,000 men in the field at this time, of whom two-thirds or more were usually *condottieri* (in 1432, for instance, the republic fielded 12,000 mercenary cavalry and 8,000 mercenary infantry plus 11,000 militia), and thereafter, following each successive peace treaty, a larger mercenary element tended to be retained in permanent employ when the majority of the army was subsequently disbanded — 5,000 horse and 2,000 foot in 1433; 6,000 horse and 2,000 foot in 1454; 6,000 horse and 3,000 foot in 1480 (a year in which 8,000 cavalry were actually under contract); 6,500-7,000 cavalry by 1485; and allegedly, though improbably, 10,000 cavalry and 7,000 infantry by the beginning of the Italian Wars in 1494, when the republic's contribution to the anti-French Holy League was 8,000 cavalry and 4,000 infantry. For much of the first half of the 15th century a considerable element of the standing army was made up of *lanze spezzate* (ie, 'broken lances'), men of condottieri companies re-employed by the republic after the death or retirement of their leaders, whose names the surviving lances tended to retain (eg, the Roberteschi, Gatteschi and Colleoneschi of Roberto da Montalbodo, Gattamelata and Bartolomeo Colleoni). Venice had 400 lanze spezzate in her employ as early as 1427, and by the 1470s there were considerable numbers of them, by that date often commanded by Venetian officers. Thereafter, however, such troops were either allocated to the companies of other condottieri or else gradually pensioned off, so that by the beginning of the 16th century they had virtually disappeared.

Venetian lances, like those elsewhere in Italy, at first consisted of 3 men, comprising a man-at-arms (called an *elmetto* or *vero armigero* by the mid-15th century), plus a second, less well-equipped man-at-arms and a mounted servant or page. By the 1470s at the latest, however, 4 men per lance was becoming commonplace in Venetian armies in wartime, though only being first officially recognised in the peacetime army in 1490, increasing to 5 men in 1494 (when it was termed a *corazza,* though elmetto had by that time seemingly assumed the same meaning). One of the additional men was frequently a mounted crossbowman; provision for a detachment of mounted crossbowmen, for use as bodyguards, was included in most large condotte in the second half of the 15th century, and by 1490 mounted crossbowmen were a recognisable, separate arm of the republic's forces under their own captain, comprising as much as a third of any cavalry force (with *elmetti* and light cavalry providing the other two-thirds). There were even some mounted handgunners. Italian lances, incidentally, did not include an infantry element, unlike those of contemporary France and Burgundy; foot-soldiers were raised instead by an extension of the condotte system and were commanded by contracted constables, under the overall command of a 'captain of the infantry' (who, however, was normally a mounted condottiere with his own retinue of some 100 or more cavalry and mounted crossbowmen). At first the infantry were equally divided into crossbowmen, shield-bearers and spearmen, but by the 1440s these had begun to be replaced by a two-fold division into archers, crossbowmen and handgunners on the one hand, and sword-and-buckler men and halberdiers or pikemen on the other, handgun companies (largely composed of Germans and other *Oltramontani*) having been first introduced in the period 1433-48. The training of Venetian citizens in the use of the handgun, to reduce the republic's reliance on foreign mercenaries, commenced only in 1490, but by 1493 Friuli alone could field 900 militia handgunners. There were in addition some Swiss mercenary infantry in the late-15th century, plus Albanian and Cretan infantry throughout much of the period. For full details on the size and organisation of condottiere companies see volume 1, pages 35-38.

As will have already become apparent, Venetian army commanders were inevitably condottieri, and those that the republic employed were generally the best there were, including in the 15th century Gianfrancesco Gonzaga, Michele Attendolo, Sigismondo Malatesta, Carmagnola, Gattamelata ('The Honeyed Cat') and Colleoni. Nevertheless, one or two Venetian noblemen called *provveditori* (commissioners) generally accompanied each condottieri army on campaign to ensure that the republic's interests were represented at all times, and condottieri who fell foul of them were in danger of losing their command, their freedom or even their lives. These provveditori in addition sometimes commanded troops on the battlefield. Commander-in-chief of Venice's armies was a condottiere with the rank of Captain-General. The titles Governor-General and Lieutenant-General, at first implying lower status, are also to be found.

Venice generally maintained sizeable forces in Friuli (her eastern frontier, under Turkish attack from 1470 on), and in her overseas possessions, particularly in the Morea and Albania, and it was from these territories that the republic obtained its 'stradiots', a type of lance- and bow-armed light cavalry, with 'a reputation for ill discipline', that first began to appear in Venetian armies during the war of 1463-79 against the Ottoman Turks in the Morea and Dalmatia, against whom they were considerably more effective than conventional Italian men-at-arms. They were employed in Friuli by the late-1470s, and in 1479 1,000 from Coron were taken into permanent employ and transferred to Italy, another 1,000 being taken on in 1482. By 1497 there were as many as 3,000 in Friuli alone, providing most of the Venetian garrisons there. Each company (they were seemingly organised in tens and hundreds) was recruited and led by its own local nobility, resulting in a strong bond of kinship and loyalty among them. Their overall commander in Venetian service was an official called the 'provveditore of the stradiots' who, unlike most provveditori, actually led them on the battlefield too; this post first appeared during the War of Ferrara (1482-84), during which the stradiots 'were largely responsible for the Venetian victory at Argenta' in 1482. Further details of these colourful soldiers can be found under figure 68 below and in *Armies of the Sixteenth Century.*

The Navy

Whatever ambitions or successes Venice may have had on land at different times throughout this period, she remained first and foremost a maritime power; which inevitably presupposed the continuous availability of a considerable number of ships and seamen ready for action at all times. Obviously, the size of fleets varied, but even at the very beginning of this period they generally averaged about 25-30 galleys, plus smaller vessels, transports and, occasionally, large oar-and-sail propelled warships called *galeazze.* As with the republic's land forces, in the mid-14th century the navy's strength was seriously reduced by the Black Death, so that the fleets of her allies had to be depended on as a stopgap solution to the shortage of manpower that resulted — after the Genoese capture of Negroponte in 1350, for example, King Peter of Aragon provided 30 warships and John VI Cantacuzene, Emperor of Byzantium, provided 20, of which Venice was to pay

for the crews and upkeep of 12 and 8 vessels respectively. Although her resources had still not fully recovered even 30 years later, Venice's increasing maritime potential is nevertheless evident in the War of Chioggia of 1378-81 (the Fourth Genoese War), when even after the loss at Pola in 1379 of most of a fleet of 20-24 galleys, another flotilla of 13 galleys was still to be found at sea, and in December of the very same year an additional fleet of 9 great galleys (i.e., armed merchantmen) plus 25 light war galleys was fitted out in Venice. Indeed, it was her ability to constantly — and speedily — replace lost ships that was one of the republic's greatest strengths, an ability which resulted from the early establishment of a well-organised, state-run shipyard called the Arsenal (the name deriving from the Arabic *Dar sina'a,* meaning 'House of industry'). At the beginning of this period up to 10 'galleys of the guard', ready for action, were maintained here in peacetime, plus 10-12 more that could be made ready virtually immediately and a further 25 in reserve that could be fitted out at short notice (this last figure occurring in a document of 1417 entreating that this traditional requirement be observed). In 1442 Venice called upon the Arsenal to complete 50 new galleys and fit out a further 25, another 50 being made ready in 1453. Under increasing Ottoman pressure, the size of the republic's fleets grew steadily larger. In 1470 she fielded as many as 73 galleys, leaving only 24 unfinished vessels at home, and over the next 2-3 years fleets totalling 70-100 galleys were regularly maintained at sea.

Surprisingly it had taken until the 1470s for Venice to recognise the Ottoman Turks as their principal maritime enemy, until the realisation was finally, forcefully driven home by the loss of Negroponte to them in 1470, when the Venetian fleet in the area, comprising 40 galleys, was obliged to fall back on Crete by the sheer size of the opposing force — 100 light galleys and 200 or more auxiliary vessels. Venice's response in 1473, when it was seen that the capacity of the Arsenal was no longer adequate to produce the larger fleets that were called for, was to build an extension (called, appropriately enough, the 'Newest Arsenal') so that up to 80 galleys could now be simultaneously constructed and stored, a capacity that was increased to 116 soon after, a 'mothball fleet' of 25 completed, fitted-out war galleys being permanently stored there ready for emergencies. This latter figure was increased to 50 in the late-15th century, and to 100 in the first half of the 16th century (though it is unlikely that this last target was ever achieved). Despite all these preparations, however, it is sad to relate that on the occasion of the Ottomans' next advance in 1498 the Venetians had only 13 light galleys at sea, and even at the Battle of Zonchio in 1499 there were only 48 light galleys and 17 great galleys.

At the beginning of the 14th century galleys usually had 120 oarsmen (*galeotti*), comprising 2 men per bench and 30 benches on each side, though this figure could be increased to 180 by the addition of a third man to each bench, a practice which became customary in the course of the 14th century. Of the 180 oarsmen, 20-30 were designated 'bowmen', and later these included handgunners and artillerists and had no connection with rowing (see note to figure 65). In addition there were some 'bowmen of the quarterdeck' (*balestrieri della popa*), who were young nobles serving a sort of apprenticeship, rather like midshipmen; in 1400 each galley was required to carry 4, then 6, and by 1483 8 such youths. In total the average galley crew numbered 200 men up until the early-15th century, when Doge Thommaso Mocenigo (1414-25) ordained that this figure should be increased to 300. Even thereafter 200-230 seems to have remained the norm. The galley commander, called a *sopracomito* or *patrone,* was usually a nobleman appointed by the state (though the post was often purchased after 1329), as too were fleet commanders (*capitani*). Supreme naval commander was the senate-elected 'Captain-General of the Sea', who had final authority over all other Venetian fleet commanders everywhere.

In addition to Venice herself, Dalmatia and the republic's Greek colonies, notably Crete, were also expected to supply crews (though not ships), the usual custom being to send galleys out to them from Venice with skeleton crews of only one man per bench. 9 out of a fleet of 14 vessels were manned by the Greek colonies in this way in 1403.

Artillery

Venice had cannon even in the first half of the 14th century and had started to mount them on her ships in 1379 during the War of Chioggia. Like her ships, Venice's artillery too was manufactured in the Arsenal, which, according to the traveller Arnold von Harff, by 1497 contained 3 mortars, 38 'main pieces', 160 large guns, 44 'carthouns', and more than 500 smaller guns. Nearly all of these were of copper, the 5 largest each being of 3 pieces that screwed together and could fire 1,000 lb shot. 400 of the smaller guns were each mounted 'on 2 strong wheels' for land use. Harff reckoned that he had never seen such an abundance of artillery before, though he had visited armouries in Brescia, Verona, Padua, Vienna, Modon, Corfu, Romania, Candia, Cyprus and elsewhere. Despite the fact that the last 5 of the aforementioned were Venetian possessions, Harff's guide nevertheless insisted that 'in every town under their dominion [there] was more artillery than we saw here'. Despite the establishment in 1471 of a state-run scheme designed to train

Venetians in the manufacture and use of artillery, most of the republic's gunners appear to have still been foreigners even in the late-15th century, notably Germans, Burgundians and Englishmen. By the 1480s command of the artillery was the responsibility of a provveditore-general.

THE HOSPITALLERS: THE KNIGHTS OF RHODES

After the fall of Acre to the Mamluks in 1291 the Hospitallers had withdrawn to Cyprus where, however, they found that the estates they held were not extensive enough to support them. To make things even worse they were prohibited by the king — with whom they were not on the best of terms — from acquiring any more lands. As a result, statutes of 1301 and 1302 attempted (unsuccessfully, it would seem) to reduce the Convent's numbers on the island to 80 brethren-at-arms, of whom 65 or 70 were to be knights and the rest sergeants. With such bleak prospects, therefore, an opportunity for the Order to take control of Rhodes and the islands of the Dodecanese in 1306 and thus establish its independence was quickly seized. Rhodes at that time was nominally part of the Byzantine Empire, though its governor had seceded and was effectively ruling the island as an independent state. Allied with a Genoese corsair, the first Hospitaller attack, under the Grand Master Foulques de Villaret, comprised a fleet of no more than 2 galleys and 4 other ships carrying 35 brother knights, 6 Turcopoles and 500 infantry, plus 2 Genoese galleys. The city of Rhodes itself finally fell in 1308 after a protracted siege, and the Hospitallers transferred their Convent from Cyprus about 2 years later, in 1309 or 1310. However, even after the conquest of Rhodes the Order continued in addition to be a major landholder in Cyprus, with preceptories or towers at Limassol, Nicosia, Famagusta and elsewhere, including a number of lesser fortified sites handed over after the dissolution of the Order of the Temple (e.g. the fort of Gastria), and in 1310 the Preceptor of Cyprus was still able to raise a force of 80 brethren (admittedly including 40 who had returned from Rhodes), plus 20 Turcopoles and 200 infantry, to support King Henry II.

Before long Kos, Nisyros and the rest of the Dodecanese archipelago was also in the Order's hands, plus the tiny island of Castellorizzo (until 1450) and some forts on the Turkish mainland, principally the Castle of St Peter at Halikarnassos, or Bodrum, constructed only at the beginning of the 15th century; one source of c. 1357 described de Villaret as holding 'many castles in Turkey', captured from both the Byzantines and the Turks, but Anthony Luttrell emphasises that these mainland conquests were 'briefly held and unidentifiable'. One exception was Smyrna, captured by a Veneto-Cypriot-Papal league in 1344, in the subsequent defence of which the Hospitallers played a key role. In 1345 a Hospitaller officer (Fra Jean de Biandrate, prior of Lombardy) was appointed the city's *capitaneus armatae generalis*, and in 1359 Fra Nicholas Benedetti was appointed 'Captain of Smyrna' for 8 years, with orders to fortify the town and maintain 150 Frankish mercenaries and 2 galleys for its defence. The Order became wholly, if reluctantly, responsible for Smyrna's defence in 1374, holding it until its capture and destruction by Tamerlane at the end of 1402. One further area of Hospitaller involvement on the mainland was in Cilicia, where the Order had held land since the Crusades. In the early-14th century the situation there was somewhat confused, their possessions having been confiscated by the Cilician crown during a civil war, so that the Preceptor, Fra Maurice de Pagnac, had to maintain *plures equites et armigeri* there entirely at his own expense in the 1320s. The situation may have improved somewhat thereafter, for a source of c. 1323 claims that the Order could afford to maintain 150 armed horsemen from its Cypriot and Armenian incomes. However, de Pagnac's death in 1328 effectively marked the end of the Preceptory, though it continued to exist on paper, a Preceptor being recorded again in 1340 and a Prior as late as 1347. The kingdom itself was liquidated by the Mamluks in 1375.

In addition Hospitaller contingents appeared in virtually every major Aegean naval campaign throughout this period, and accompanied numerous expeditions against the Anatolian, Syrian and Egyptian coastlines in alliance with Cypriots, Venetians or Genoese. They provided 4 galleys for King Peter I's capture of Adalia in 1361, for instance, and participated too in his attacks on Alexandria in 1365 (for which they provided 4 galleys, or horse-transports, perhaps 12 transports, 100 brethren plus mercenaries), and on Tripoli in 1367, in which the Order's Turcopolier was killed. At least 50 brethren fought alongside the Byzantines in the sack of the Ottoman fortress at Lampsacus in the Dardanelles in 1359, and Hospitaller ships under the Preceptor of Kos were involved along with the Achaeans, Venetians and Byzantines of the Morea in the naval victory over a Turkish fleet at Megara, also in about 1359 (others say 1364). Two Hospitaller galleys were even included in the Byzantine fleet with which Manuel II rescued his father from Emperor John VII in 1390. There were Hospitallers at the Battle of Nicopolis in 1396, under Grand Master Philibert de Naillac, forming part of the main body under King Sigismund — indeed, the 'English' referred to in some sources as being present at the battle were probably also Hospitallers, under the English Grand Prior, John Radyington. An Italian chronicle mentions that there were Hospitallers too at the defence of Mytilene on Lesbos in 1462, recording 70 brethren amongst its 500 defenders.

One area of more permanent involvement was Greece, where for a brief period (1377-81) the Order actually governed the principality of Achaea, becoming deeply involved in the complex political situation that then prevailed. In 1378, for instance, the Order's forces under the Grand Master Fernández de Heredia were defeated by the allied army of Ghin Boua Spata, Albanian prince of Arta, and Thomas Preljubovic, Serbian despot of Ioannina, de Heredia himself being captured. In the same year his lieutenant in Achaea, Fra Gaucher de La Bastide, Prior of Toulouse, even enlisted two elements of the so-called Navarrese Company for a period of 8 months, these comprising John de Urtubia's unit of 100 men-at-arms and Mahiot de Coquerel's of 50, paid 11,000 and 5,500 ducats respectively. There is even the possibility that the Order condoned, and that some Hospitallers perhaps even supported, the subsequent Navarrese invasion of Catalan Athens. However, the Order nevertheless abandoned Achaea in 1381, finding the financial commitment of its defence to be too great. A second period of Greek involvement commenced in 1397 (Runciman says 1400) when Theodore I, despot of the Morea, invited the Hospitallers to occupy and defend the isthmus of Corinth against the Ottomans after a similar invitation to the Venetians had been declined. A garrison was duly installed under a Captain, Fra Eli de Fossat, and was maintained until 1404, despite open conflict with the Athenians and Byzantines from early in 1403. The Order had in the meantime purchased considerable tracts of the despotate, including even Mistra and Kalavryta, but was obliged to sell them back when it withdrew from Corinth in 1404. Finally, in 1423 the Hospitallers approached the Venetians with a view to exchanging Rhodes for territory of equal value in Greece, preferably Negroponte where the Order had first — if only briefly — established a foothold at Carystus in 1351.

The internal organisation of the Order was into *langues*, unequal-sized divisions* of brethren speaking the same language, this arrangement being approved by Pope John XXII at a chapter-general summoned at Montpelier in 1331. At first there were 7 langues; each had its own Grand Prior in its mother country, plus a commander in Rhodes called a *pilier*, who was a conventual bailiff of the Order and held one of its senior posts. In order of importance the langues and the respective posts their piliers held were: Provence, with the post of Grand Preceptor or Grand Commander, the Master's lieutenant; Auvergne, the post of Marshal, the senior military officer of the Order; France, the post of Hospitaller; Italy, the post of Admiral, with as his deputy the Captain of the Galleys; Spain, the post of Drapier; England (including Ireland), the post of Turcopolier, an officer now responsible for coastal defence; and lastly Germany (including Scandinavia, Bohemia and Poland), the post of Grand Bailiff. In 1462 an eighth langue was added by the division of the fifth into Castile (including Portugal) and Spain (comprising Aragon, Catalonia and Navarre), of which the latter retained the post of Drapier while the pilier of Castile held the post of Chancellor. The 7 or 8 piliers formed part of the Grand Master's council, and the brethren actually resident on Rhodes or one of its dependent islands constituted the Order's Convent.

Of the Order's various types of brethren, the knights — the so-called 'knights of justice' — were the most important. To gain admittance to the Order at all, these had first to prove noble birth on both sides for several generations, the precise regulations varying from langue to langue; the Germans were strictest, requiring 16 quarterings of the postulant's coat-of-arms, while the French langues required 8 and the rest only 4. They then spent a year as novices before joining the Convent at Rhodes for 3 years' military service, which by the end of the 15th century generally took the form of service as an officer aboard the Order's galleys, each year of which was termed a *carovane,* or caravan. After this the knight spent at least a further 2 years in the Convent, after which he was eligible for promotion, though to qualify for the position of bailiff† a knight first had to spend 15 years at Rhodes. This practice led to some caustic criticism of the Order, such as that voiced by the French crusade theorist Philippe de Mézières, who wrote in 1389 that brethren only went to Rhodes for the few years necessary (he says 4 or 5) to secure themselves promotion to a rich European priory or preceptory. The Order's other categories of brethren comprised: conventual chaplains, who were non-military ecclesiastics eligible for promotion to the posts of Prior, or even Bishop of the Order; serving brethren, originally sergeants but by this period men-at-arms like the knights, from whom they differed principally in being expected to be of 'respectable' rather than noble birth; 'chaplains of obedience', the ecclesiastical counterpart of the serving brethren and similarly non-noble; and lastly 'magistral knights' and 'knights of grace' (i.e., *donats),* who were honorary brethren nominated by the Grand

*For instance, the langue of Provence at Rhodes numbered 63 brethren in 1399, while in 1409 that of Auvergne numbered only 33.

†Bailiffs constituted the highest grade of officer after the Grand Master and Grand Priors. They comprised the piliers of the langues on Rhodes, plus European and Syrian bailiffs (the latter nominal posts with the exception, in the early-14th century, of Cilician Armenia). Collectively the bailiffs constituted the Order's 'Sacred Council'.

Master — in 1382 we read of 56 brethren and donats being ordered to return to Europe because of Rhodes' inability to support them. In addition the Order employed considerable numbers of mercenaries (*stipendarii*), particularly aboard their galleys and in their garrisons on Kos, at Smyrna and, in the 15th century, in the fortress of St Peter at Halikarnassos; bound by an oath of allegiance, they were maintained by the payments made in lieu of military service by Italian settlers in Rhodes. During the 4-month siege of the island by the Mamluks in 1444 the Order apparently paid out as much as 68,000 ducats to its mercenaries, hired to fight on both land and sea. One authority reckons there were as many as 3-4,000 Italian and French mercenaries on Rhodes in 1480.

From 1313 onwards colonists, largely Italians, were attracted from Europe by the lure of grants of captured land on Rhodes, the smaller islands, and even the Turkish mainland. Valued at 65 *librae* (650 Rhodian bezants) for a married knight with a family, and 50 librae for a bachelor, the grants were given out in exchange for the military service of the knight (*uno homine latino*) and 2 men, one of them armed, plus a warhorse and a rounsey or mule. Non-knightly men-at-arms received fiefs valued at 40 librae if married, or 30 librae if single, in exchange for their mounted military service accompanied by a single foot-soldier armed with either a lance or a crossbow. Commoners received fiefs 15 or 13 librae in value in exchange for military service on foot. All recipients of these assorted sizes of grant were required to perform their service whenever and wherever called upon, but apparently only in defence of the island. They served at their own expense for expeditions of a single day's duration, but were paid according to their rank for longer periods. Settlers who owned galleys of 112-120 oars and were prepared to put them at the disposal of the Order when required received lands and property worth 100 librae (or less for smaller vessels), plus the guarantee that if the ship was lost in Hospitaller service the Order would replace it. The crews, on the other hand, were provided by seamen who received non-feudal *stipendia:* a galley captain (*comitus galea*) was paid 20 bezants a month, or 30 when at sea, while other officers and navigators (*naucherii*) were paid 10 or 15 bezants and sailors and oarsmen received only victuals and 'ordinary pay'. However, since these salaries were lower than those offered, for example, by the Venetians, they proved unattractive to potential colonists, as is proved by the Order's reliance both on hired Genoese galleys and on the *servitudo marina* for the manning of its own.

Also known as *servitudo marinariorum* and *servitut de la marine,* servitudo marina was an obligation by which those members of the native, basically Greek, population called *subditi marinarii* provided hereditary naval service by reason of their social standing. It was probably evolved by the Hospitallers from the vestiges of the old Byzantine theme system (Rhodes having once been part of the Kibyrrhaiots maritime *thema*), which though commuted to cash payments as early as the 11th century probably nevertheless continued to survive under the Byzantine administration that had existed up until the Hospitaller conquest. Established by the Order by 1347 at the latest and probably much earlier, possibly c. 1314, this servitudo guaranteed the Order a ready supply of reliable seamen who, unlike mercenaries, only had to be paid when actually serving, the Admiral being responsible for recruiting and paying them. The *marinarii* of each district were grouped into *squadre,* each squadra constituting the crew of a galley and serving in turn on a rota basis. Men unable to serve were obliged to provide a substitute. For an assortment of reasons the number of marinarii declined during the 14th century, so that in 1428 the age from which such service was required was lowered to 12, while in 1433 a general amnesty was declared for all marinarii who had fled Rhodes and the other islands in order to escape the obligation, in the hope that they might return. In 1446 it even proved necessary to transfer the duty of manning the 'galley of the guard' (*galia dela guardia,* for which see below), previously a responsibility of the marinarii, to a Genoese merchant company. Eventually the increasing inadequacies of the servitudo resulted in its abolition at the end of 1462, when it was replaced instead by a grain-tax to finance the employment of mercenaries. In addition there are some indications that press-gang methods of recruitment may also have been resorted to after 1462.

The Order had begun building up its naval strength almost as soon as it had been evicted from Acre. The office of Admiral had appeared by 1299, and from 1300 he was empowered to raise crews at the Treasury's expense when required. Their naval strength remained of modest proportions, and throughout the 14th century the Hospitallers rarely mustered more than 4 or 6 galleys, excluding the one or 2 that were permanently maintained to guard Rhodes (the Cretan Emmanuele Piloti, for instance, mentions 'the galley of Rhodes' in 1403 and the 'galleys of the guard' in 1408). In 1320 the Order won a naval victory over the Turks off Rhodes with a fleet of 4 galleys and 12 other vessels, and in 1333 the Hospitallers were expected to provide 4 galleys to a combined Veneto-Byzantine fleet, this number being increased to 10 by the time they set out in 1334, not all of which were provided. Another projected expedition for 1335 was to have included 6 galleys and 8 transports but was abandoned, but the Order did provide 6 galleys to the Veneto-Cypriot-Papal fleet that captured Smyrna in 1344. They promised 3 galleys to another abandoned coalition of 1350, and supplied 4 to Peter I's expeditions of 1361 and 1365. Even as late as 1440, the fleet that sailed

out to confront the Mamluks included only 7 galleys (which had been hired from the Genoese), plus 4 large merchantmen and 6 other vessels, while in 1470 and 1472 the Order contributed just 2 galleys to Venetian and Veneto-Neapolitan fleets respectively.

Most Hospitaller ships were built in Genoa or Marseilles, but occasionally some were constructed, and others usually repaired, in the Order's own arsenal at Rhodes. The galleys usually carried one or 2 small guns in the bows, a practice probably copied from the Venetians in the late-14th century. We read of Hospitaller ships using their guns against the Mamluk fleet in 1440, and Doukas tells us that in 1455 an Ottoman fleet approaching Rhodes found the harbour 'filled with large ships all standing in battle formation' and 'saw that there was twice as much artillery' on them as there had been aboard the well-armed Genoese ships it had encountered at Chios. The Order also made full and efficient use of artillery on land, though there is some evidence that they considered its use unchivalrous. Sources for the Ottoman siege of the island in 1480 record the successes of the Hospitaller artillery on that occasion, and in one of Caoursin's manuscript illustrations of the Turkish attack a battery of some 6 light pieces mounted on the walls features prominently. The Order's artillerists were non-brethren, being technicians employed by contract (as was Johann Berger, their master-gunner in 1480). Of 2 surviving Hospitaller guns in Nuremberg and Paris dating to Pierre d'Aubusson's period as Grand Master, one is a culverine that could fire 55 lb shot, while the other is a bombard measuring 6 feet 3 inches in length and capable of firing stone shot weighing 574 lbs.

The total strength of the Hospitaller Convent of Rhodes, where the Order had built or restored some 30 fortresses by 1480, is recorded in many contemporary sources throughout this era. There were 200 knights by 1330 and reputedly 400 on Rhodes, plus mercenaries, local levies, and a small garrison on Kos, by 1345. Rudolf von Suchem in 1350 put the Convent at 350 knights, while an anonymous traveller of 1441 reckoned there were 500, a figure repeated by Arnold von Harff in 1497. However, the Order's official strength on Rhodes in 1466 was only 300 knights, 20 (200?) serving brethren and 30 chaplains, increased to 450 and then 550 only in the early years of the 16th century. The discrepancy, however, is fairly certainly explained by the failure of some of these figures to include the garrisons of the Dodecanese islands and the mainland fortresses, which were sizeable. The Preceptor of Kos, for instance, had to maintain 25 brethren, 10 mercenary men-at-arms and 100 Turcopoles by 1394-95 (plus a doctor, an apothecary and a galley), while in 1403 Ruy Gonzalez de Clavijo described the island as being 'always garrisoned by 100 knights of the Order of St John, under a lieutenant, and they hold the castle and the town in force.' The fortress of St Peter at Halikarnassos had a garrison that included 50 brethren in 1460, while Smyrna at its fall to Tamerlane in 1402 had a garrison of 200 knights plus mercenaries. In addition to the Convent, the Order could draw on its European possessions for reinforcements. 100 brethren were summoned to Rhodes in 1358, for example, while in 1375 the pope authorised 500 brethren, each with an esquire, to be called up for operations in Greece, though the list given adds up to only 390, comprised of 125 brethren from the French priories, 101 Italian, 73 Spanish and Portuguese, 38 English and Irish, 32 German and Bohemian, 17 Hungarian, and 2 each from the preceptories of Achaea and the duchy of Athens.

When Rhodes finally fell to the Ottomans in 1522 its garrison was made up of 290 brother knights, 15 donati, about 300 serving brethren, 500 Genoese and 50 Venetian seamen, 400 Cretan crossbowmen, and several thousand Rhodian militiamen.

CYPRUS

The kingdom of Cyprus reached the height of its prestige and power early in this period under Hugh IV (1324-59) and Peter I (1359-69), even establishing a foothold on the mainland under the latter by the cession of Corycus by the Cilician Armenians in 1360 (lost 1448) and the capture of Adalia, modern Antalya, in 1361 (lost 1373). However, the murder of the crusading king Peter I by dissident barons led in 1373 to his widow supporting a Genoese invasion of the island that tore out its heart and crippled it financially. As a result of the treaty signed in 1374 the Cypriot exchequer ended up virtually footing the bill for the Genoese expedition and paying for the maintenance thereafter of Genoa's forces stationed on the island, in addition to which Famagusta had to be handed over to the republic. Abortive attempts to evict the Genoese, often in alliance with their traditional enemies the Venetians, resulted only in even more burdensome conditions being imposed, and the Genoese stranglehold on Cyprus was only finally ended with the recapture of Famagusta by James II (1460-73) in 1464. In the meantime the faction-ridden island had undergone an invasion by the Mamluks of Egypt in 1426, in retaliation for ill-advised Cypriot raids on the Syrian coast the previous year (and on many earlier occasions, right back to Peter I's raids on Alexandria in 1365 and on Tripoli and Tortosa in 1367). Receiving no aid from the Genoese, King Janus (1398-1432) was captured by the Mamluks in the Battle of Khirokitia, and was only released on payment of a huge ransom and acknowledgement of Mamluk suzerainty. It was therefore in Cypriot ports that the Mamluk fleet was

revictualled before its attacks on Rhodes in 1440 and 1443, and from 1460-64 Mamluk troops supported James II's claim to the throne, fighting against the legitimate queen, Charlotte (1458-64). Under James II Venetian influence steadily increased to fill the power vacuum left by the displacement of the Genoese, and following his premature death the republic effectively ruled the kingdom through his Venetian widow, who in 1489 officially handed over to them the government of the island, which thereby became a Venetian colony.

Although the core of Cyprus' military strength comprised the contingents of the feudal nobility as in Western Europe, other elements of the army reflected the island's cosmopolitan population. The infantry were provided chiefly by the native Greek-speaking peasantry, both *parici* (serfs) and *francomati* (freemen), plus Cypriot and Western European Franks, particularly in the role of crossbowmen (who constituted the nucleus of Cypriot infantry). In addition Cilician Armenians were often hired, as by King Peter II (1369-82) in 1373, and after the fall of their own kingdom many more fled to Cyprus, so that at the Battle of Khirokitia many of the Cypriot infantry were Armenians and the dead there included at least two Armenian knights. The forces at this battle also included Karamanli Turks ('especially employed as mercenaries' since 1415), while al-'Aini records Catalans and Rhodians (i.e. Hospitallers) being there. In the war of 1373-74 against the Genoese even Bulgarians are recorded; there were about 2,000 of them — all ex-slaves, and apparently including some Romanian Greeks and Tartars — gathered together to fight as mercenaries, initially for the Genoese but later for the king's forces, apparently in the role of light cavalry skirmishers against the Genoese lines of communication, often being recorded fighting in, or guarding, mountain passes and defiles. Other mercenaries during the 14th-15th centuries included native turcopoles (see *Armies and Enemies of the Crusades*, figure 14) and Frankish knights, predominantly from France and to a lesser extent Italy and Germany. Under the Venetians stradiots were also introduced (see figure 68), 600 raised in Albania and the Greek islands being sent to Cyprus in 1474 along with 2,000 mercenary Italian infantry.

No records of Cyprus' total military potential seem to have survived for this period prior to the Venetian takeover, but there were probably about 1,000 knights available to the crown, at least in the 14th century; these the king had to pay if he required their service. In addition an *arrière-ban* of all able-bodied men over 15 years of age could be called on in emergencies, as it was to defend Nicosia in 1373. It would seem that in all up to 10,000 men were available to the king under ordinary circumstances — Peter I led 7,000 men in his raid on Syria in 1367, while in 1373 we read of the Constable of Cyprus placing 1,000 men in Famagusta and appointing 300 more as coastguards, while the Prince of Antioch and Peter II led 1,000 and 2,000-2,500 respectively from Nicosia, in addition to which there were large garrison forces and the 2,000 Bulgarians mentioned above. The largest Cypriot army on record for the 15th century was that defeated at Khirokitia, which is recorded as 1,600 knights and 4,000 infantry by Leontios Makhairas (who was present); 2,000 cavalry and about 8,000 infantry by al-'Aini; and 2,000 cavalry and a 'large number' of infantry by Sanudo. Khalil al-Dhahiri put the cavalry element at 2,300. Perhaps the lower figures do not include the vanguard detachment, which according to Monstrelet comprised 300 Hospitaller and Frankish cavalry and 'many' infantry. Two Moslem sources record the Cypriot losses in the battle as 6,000 or more men, though another (Taghribirdi) says 2,000 were killed in the battle and more in the ensuing rout. Makhairas gives one or two other interesting details of the Cypriot army on this occasion, recording that it was organised in units of 100 and 50 men*, the infantry being drawn up with 'each man close up to the next so as to be like a wall. And they had prepared a hundred *pavesia* [pavises, apparently for the troops guarding the king] . . . and all the army like a wall.'

Military command was in the hands of the Constable of Cyprus and the Constable of Jerusalem (usually brothers of the king), and the Marshal and Seneschal, all of these, together with the Butler and Chamberlain, being 'officers of the kingdom', their posts generally being held for life; in addition there were the Admiral and the Turcopolier, who were among the so-called 'officers of Cyprus', which differed in being impermanent posts that might be held for a short time only. After the island passed to Venice its forces became the responsibility of a Captain, often called 'Captain of Cyprus', who was commander-in-chief in peacetime but was often subordinated to a specially appointed Provveditore-General in wartime. A Venetian attempt in 1489 to change the feudal service of the nobility so that they served at their own expense met with such strong protest that from 1490 the old practice of paid service was restored. At the very end of this period, in 1500, Venetian troops on Cyprus comprised 800 ('good and bad') in Famagusta and 150 in Kyrenia (Kerynia), plus 340 stradiots and 150 turcopoles.

Gunpowder artillery made its first appearance on the island in the war of 1404-6, in the first year of which

*This is how Dawkins translates the passage. Hill, however, says units of 150 men.

both the king and the Genoese purchased cannon from Venice, for the siege and defence respectively of Famagusta. Though references to artillery steadily increase thereafter it seems that its role remained limited to siegework and castle defence. It may even then have been in somewhat short supply, since we read that the Mamluks sent 2 guns to James II during his struggle against the Genoese in 1461 (though it was the latter who ended up getting them).

The Navy

The king of Cyprus maintained his own fleet from the very beginning of this period. During the 14th century it reached sizeable proportions, since under Peter I 120 ships took part in the capture of Adalia (Antalya) in 1361, 108 participated in the sack of Alexandria in 1365, and 150 — transporting 7,000 men — were involved in a major raid against the Syrian coast two years later. Admittedly most of these would have been impressed merchant vessels, but the king contributed 46 ships to the Adalia expedition and 16 or more galleys to the fleet for Alexandria. Probably the standing royal fleet included some 20 galleys at most at this date, the rest being provided by the nobility and merchants. After the Genoese war of 1373-74 financial ruin seriously reduced the kingdom's ability to maintain a worthwhile navy, so that by 1426 only 2 royal galleys were available to confront the fleet of the Mamluk invaders, the rest of the small flotilla mustered on this occasion comprising another 5 galleys (2 of them Rhodian and 2 Catalan) plus a galeazze, 7 merchant ships and 2 pilgrim vessels. The lack of adequate funds to pay freemen was probably also responsible for the use of slaves and pressed individuals as oarsmen aboard Cypriot galleys in the 15th century, a custom which the Venetians based on the island were soon copying.

THE MAMLUKS

The Mamluk army of the 14th-15th centuries comprised three basic elements, these being: (a) the Royal Mamluks, or *al-mamalik as-sultaniya*, made up of the ruling sultan's own mamluks (the *mushtarawat*, often called the *ajlab* or *julban* under the Circassians) and the *mustakhdamun*, i.e. mamluks who passed into the sultan's service 'from the service of other masters'; (b) the amirs' mamluks (the *mamalik al-umara* or *ajnad al-umara*); and (c) the *al-halqa* or *ajnad al-halqa*, non-mamluk cavalry including the sons of amirs and mamluks (the *awlad an-nas*). All of these were cavalry, but there were in addition some infantry, plus artillery from the mid-14th century onwards. These various elements we shall now consider in greater detail.

The Royal Mamluks

These were stationed almost exclusively in Cairo itself, though for much of this period a few dozen were posted in Mecca, and occasionally small detachments were despatched to garrison particular trouble spots, especially during the sultanate's last few years. A few were also posted to Cyprus following its conquest in 1426. They possessed a considerable esprit de corps, which eventually led to an over-indulgence in political power and self-aggrandisement at the expense of military training, this being apparent from the late-14th century and in particular from the reign of al-Ashraf Aynal (1453-60). From that time onwards they acted more like bully-boys and gangsters than soldiers, terrorising the civil authorities, and yet at the same time totally wanting in military expertise so that one authority (Ibn Taghribirdi) was confident that, but for their respect for the sultan, even the lowliest of Cairo's black slaves could have put them to flight.

On the accession of each new sultan to the throne the previous sultan's mushtarawat was thrown out of the Cairo barracks, its leaders often being exiled or imprisoned (or, under exceptional circumstances, even executed), while senior posts were stripped from its members and handed over to the new sultan's own mamluks. Thenceforward it became part of the mustakhdamun, which comprised the mamluks not only of previous sultans (the *mamalik as-salatin, al-mutaqaddima* or *qaranisa*) but also those of dead or dismissed amirs (the *sayfiya*). Since they were never amalgamated, but continued to exist right up to the death of their last members, there could be a considerable number of qaranisa units in existence within the Royal Mamluks at any one time (al-Maqrizi records 7 in his own day), usually recorded in the sources by the surnames of their respective masters* — for example, under al-Ashraf Barsbay (1422-38) they included the *Zahiriya* of al-Zahir Barquq (1382-98), the *Nasiriya* of al-Nasir Faraj (1398-1412), the *Mu'ayyadiya* of al-Mu'ayyad Shaykh (1412-21), and others besides. They usually remained bitterly resentful both of each other (having been displaced and persecuted in turn by the mushtarawat of an incoming sultan), and of the reigning sultan's mushtarawat too, so that the sultan could place little reliance on any of them. The sayfiya, on the other hand, owed no loyalty to any particular sultan and had no axe to grind, merely serving whoever

*If Ibn Iyas' chronicle is to be relied on, units were occasionally known by their masters' first names, e.g. the *al-Khushqadamiya* of al-Zahir Khushqadam and the *al-Jaqmaqiya* of al-Zahir Jaqmaq.

happened to be on the throne at the time, and, being experienced soldiers, some of them were occasionally promoted in preference even to the sultan's amirs or mushtarawat.

During the Bahri period (1250-1382) the Royal Mamluks often totalled more than 10,000 men, counting all the above categories — Sultan an-Nasir Mohammed (who reigned, with interruptions, 1293-1340) reputedly built a barracks capable of accommodating 12,000 men in the early part of the 14th century, other sources confirming that he bought mamluks on an unprecedented scale (though one nevertheless makes it clear that in 1315 he had only 2,000, organised in 40 units of 50 men). However, under the Burji, or Circassian, sultans who succeeded to the throne in 1382, the number of Royal Mamluks dropped dramatically, Ibn Taghribirdi explaining that this decline resulted from the purchase of state *iqta'at* (fiefs) by the amirs in their own mamluks' names: 'Not satisfied with this, they also entered them in the sultan's household troops for a salary, so that an amir's mamluk became a trooper in the standing army [i.e. the halqa], a sultan's mamluk, and an amir's mamluk all at the same time, so that the livelihood of 3 men went to one. So the income of some increased and that of others decreased, and thus Egypt's army was weakened.' Indeed, there can be no doubt that it was from this date on that the military effectiveness of the Mamluks began to wane, a process which accelerated after the mid-15th century. Under the first Circassian sultan, al-Zahir Barquq, there were 5,000 mushtarawat and mustakhdamun according to Ibn Taghribirdi, and 4,000 according to al-Maqrizi, though Ibn Iyas (whom Ayalon says tends to exaggerate) claims somewhat improbably that the mushtarawat alone numbered as many as 7,000. Sultan al-Mu'ayyad Shaykh probably had 5,500 Royal Mamluks of all types at the very most (there were only 4,000 at a pay parade of 1420 where most were present), and al-Ashraf Barsbay had a similar, but smaller, number — 5,000 at the most, even including the halqa, according to his contemporary al-Maqrizi, though Ibn Iyas records 5,000 mushtarawat alone; either way, the *Ashrafiya* are still recorded as a major element of the Mamluk army even as late as 1465. The next sultan but one, al-Zahir Jaqmaq, had 4,000 in the year of his accession, but in 1460 al-Ashraf Aynal had only 1,000, plus 200 bought from Jaqmaq. Longer reigns tended to facilitate the accumulation of larger numbers of mamluks, so it is no surprise to find that under al-Ashraf Qaytbay (1468-95) the Royal Mamluks almost reached a total of 8,000 men, and would have but for an outbreak of the plague; by contrast az-Zahir Qansuh, who reigned for only a year (1498-99), had less than 2,000 mushtarawat. The penultimate Mamluk sultan, Qansuh al-Ghawri (1501-16), probably had about 4-5,000 purchased mamluks.

Of all these totals, a considerable proportion could be qaranis: in 1513 there were well over 1,000, and in 1514 there were 1,900 in a field army that included just 500 mushtarawat. Probably there were usually about 2-3,000, as would seem to be proven by a list of mustakhdamun contingents in the reign of al-Zahir Khushqadam (1461-67), which gives the Ashrafiya Aynal some 1,600 men, the Zahiriya Jaqmaq over 600 (including 5 amirs of 100), and the Ashrafiya Barsbay an unspecified number comprised principally of *Khassakiya* (see below) and of amirs of 1,000, 40 or 10, plus small numbers of Mu'ayyadiya (30 men) and Nasiriya; these figures should be compared to the strength of Khushqadam's mushtarawat, which numbered 3,000 of whom 400 were *kuttabiya*, i.e. mamluks who had not yet finished their training and received their freedom.

Elite of the corps of Royal Mamluks were the sultan's Khassakiya or select bodyguard, who stayed close by him at all times. They were frequently sent on special diplomatic missions and most amirs were chosen from amongst them. At first they numbered no more than 24 or 40 men, later 80, and though they were increased to 400 or even (according to one source) 1,000 under al-Nasir Faraj at the beginning of the 15th century, they were subsequently reduced again to 80 men, then 40, under his successors. However, under al-Ghawri they were again increased, to 800 by 1503 and later to 1,200, at which strength they still stood when the sultanate was conquered by the Ottoman Turks in 1517.

The amirs' mamluks

The number of mamluks or horsemen that each amir could own or have in his employ was fixed, theoretically depending on his rank. He paid them from two-thirds of the income of his *iqta* or fief, receiving only one-third himself, though probably this arrangement was less than strictly adhered to. On his death or dismissal, the amir's mamluks entered the sultan's service as sayfiya (see above) or the service of other amirs — sometimes both — or, very occasionally, they were attached to the halqa. In addition, if the amir should be transferred to another province his mamluks could not be transferred with him. However, it should be noted that even as late as the first half of the 15th century, many of the amirs' horsemen were free, non-mamluk troops (often members of the halqa), but thereafter they became exclusively mamluks.

The lowest rank of amir nominally to be found was that of the *amir khamsah* or 'amir of 5', commander of 5 horsemen. These were very few in number and were mostly the sons of deceased amirs. (Even more

rare was the *amir arba'a* or 'amir of 4'.) Next came the *amir 'ashara* or 'amir of 10'; until the first half of the 15th century this rank also included amirs with 20 or even more mamluks, but thereafter the latter were graded as *umara 'ishrin* ('amirs of 20'). Then came the rank *amir tablkhanah* or *amir arba'in,* the former meaning 'amir with drums', this title deriving from the fact that amirs of this grade and upwards were entitled to have a band, which accompanied their troops in wartime. Az-Zahiri reports that by his day (the mid-15th century) this comprised only 2 drums and 2 flutes, but earlier it had been considerably bigger, with more drums and also trumpets.* The 'amir with drums' could have 40 mamluks (hence his other title of 'amir of 40'), and occasionally owned up to 70 or 80. The highest rank of all was that of the *amir mi'a muqaddam alf* or 'amir of 100 and commander of 1,000', who could have 100 mamluks or horsemen of his own and command 1,000 members of the halqa on campaign. However, the number of mamluks he owned frequently reached 110-120, and in some instances considerably greater numbers — for example, one amir of the late Bahri period had 1,500, or perhaps even 3,000, including 4 amirs of 100, while the *atabak al-asakir* ('commander-in-chief') often had 500-1,000. Other Bahri sources record amirs with anything from 200 to 800 mamluks in their employ, but in the Circassian period 2-400 was deemed exceptional, and only one amir — an atabak al-asakir — had as many as 1,000. Regardless of their numbers, however, the troops of each amir constituted a unit called a *tulb,* comparable to the constabulary of feudal Europe in that it thereby varied in size from amir to amir (we read of tulbs of 60, 150 and 300 men, for instance). When larger musters of troops took place decimal organisation appears to have been imposed — Arnold von Harff tells us that 4,000 Mamluks marching on Damascus in 1498 were organised into 4 divisions. Interestingly Ibn Iyas, writing at the very end of the Mamluk era, says that at that time the Royal Mamluks were only organised into units and sub-units when they actually set out on campaign, and this is probably true of the Mamluks in general.

From the beginning of this era there were 24 amirs of 100 in Egypt, reduced to 18-20 by the early-15th century, further reduced to 11 by 1424 but again reaching 24 by 1502, and 26-27 in the sultanate's last few years. The sultan's highest-ranking military officers were drawn from among these amirs, comprising the atabak al-asakir (comparable to the European office of Constable); the *amir silah* (grand master of the armour, responsible for the Royal Mamluks' armoury); the *hajib al-hujjab* (grand chamberlain, responsible for justice among the mamluks, with at first 2 and later 4 assistants); the *ra's nawbat an-nuwab* (chief of the corps of Mamluks, responsible with 3 assistants for the Royal Mamluks and their conduct); the *khazindar kabir* (grand treasurer); and the *amir akhur* (grand master of the stable). Additional officers, drawn from the ranks of the amirs of 40, included the *ustadar* (grand major domo, the paymaster and, to a certain extent, quarter-master for the Royal Mamluks); the *amir jandar* (responsible for the *zardkhana,* i.e., the arsenal and prison); the *naqib al-jaysh* (chief of military police); and the *naqib al-mamalik* (responsible for the policing of the Royal Mamluks).

The following table gives some idea of the numbers of amirs' mamluks as recorded at various times during this period:

	1315	az-Zahiri (no date)	1486	1512	1516/17
Amirs of 100	24	24	15	24	26
Amirs of 40	214	40	10	75	more
Amirs of 20	–	20	?	?	than
Amirs of 10	207	50	60	185	300
Amirs of 5	?	30	?	?	?
Official total	13,030	5,050	2,500	7,250	?8,500

Az-Zahiri's list, allegedly drawn up in response to a Mongol threat and probably dating to the early-14th century, actually gives an overall total of 8,000 amirs' mamluks for Egypt (i.e., probably including those in excess of official requirements) plus 2,000 for Aleppo, 1,000 for Tripoli and 1,000 for Safed.

The halqa

At the beginning of this period the halqa included native Egyptians, sons of mamluks, mamluks and even amirs, particularly amongst its officers. These latter technically comprised amirs of 100; *bash* and *nuqaba* (singular *naqib,* commanders of 100); and *muqaddamun halqa* (singular *muqaddam,* commanders of 40, whose rank lasted only for the duration of a campaign). Ayalon, however, notes that throughout most of the

*Amirs of 100 seem to have had bands comprised of 80 loads of drums, 2 timbals, 2 flutes and 4 trumpets, while the commander-in-chief had a band twice as big.

Circassian period 'this chain of command had but a paper existence'. Although at first strong in numbers and military importance, the redistribution of fiefs in 1297, 1312 and 1315 marked the beginning of their decline by reducing the lands they held to only a fraction of their 13th century levels, which action, so contemporaries believed, 'was the cause of the weakness of the Egyptian army, especially of the halqa'. In the century after 1315 the halqa in Egypt declined from over 9,000 (in fact 204 officers and 8,932 men) to a mere 1,000 men, and after the mid-14th century many of these were artisans rather than soldiers, having purchased the fiefs of the latter. By the end of the century, though some still accompanied the army on campaign, the principal duties of the halqa had become simply to guard the citadel, gates and old city of Cairo during the army's absence in the field. Of the few who served alongside the mamluks, many had been reduced to the role of infantry by their inability to afford horses, and even the combining of groups of 2 or 4 fiefs in 1418 to finance a horseman each seemingly provided less than 400 men. One halqa detachment which did retain its importance was the *ajnad al-Mi'atayn,* posted in Alexandria after the Cypriot attack of 1365. At first 200-strong, by the mid-15th century it comprised 360 men under 12 *muqaddamun,* each commanding 30 men rather than the official 40.

Within the halqa, the elite were provided by the *awlad an-nas,* literally 'children of the people', who were the sons of amirs and mamluks. Many of these themselves became amirs, though usually achieving ranks no higher than amir of 40. Their importance, however, declined alongside that of the halqa.

Az-Zahiri's list gives improbable totals of halqa troops for the sultanate's Syrian provinces as follows: Damascus 12,000; Aleppo 6,000; Tripoli 4,000; and Safed 1,000. If these figures are to be believed at all they must represent the total number of provincial non-mamluk troops of all categories.

Infantry

These were clearly not counted as part of the Mamluk army proper — the *al-askar as-sultani* or *al-asakir as-sultaniya,* as it was called — which is defined by Moslem sources as comprising only the above-mentioned elements, i.e., the mushtarawat, mustakhdamun, mamalik al-umara and al-halqa. Instead they seem to have been hired on an ad hoc basis as, when and where required, usually from amongst the Arab, Turcoman and al-Ashir (Druze)* population of Egypt and Syria (Gilbert de Lannoy, for instance, mentions the 'common foot-soldiers along the coast of Syria . . . armed with a bow and arrows, and a great many of them have swords'). Their principal roles were doubtless those of providing garrison troops and besieging fortresses, but occasionally they served in naval campaigns (as, for example, in the invasion of Cyprus) and alongside field-armies, since Mamluk military manuals often include detailed advice on how infantry should be used in battle (see page 77). However, their numbers appear not to have been great during this period, judging from Moslem sources usually comprising only a few thousand at the very most, even under exceptional circumstances (such as revolts by dissident amirs, who tended to field them in the largest numbers). But Western observers now, as in the Crusade period, nevertheless continued to claim that the Mamluks could field large numbers of admittedly poorly-equipped infantry, pricipally bow-armed.

Firearm-equipped infantry

The handgun is generally accepted as having been introduced into the Mamluk armed forces under Sultan Qaytbay some time before 1490 (see note to figure 19). His son and successor an-Nasir (1495-98) established a unit of black slave arquebusiers called *'Abid Naftiya* or *'Abid Barudiya,* which was about 500-strong by 1498 when his amirs, resentful of the favouritism he showed these slaves, forced him to disband them. Arquebusiers nevertheless continued to be employed by the Mamluk sultans in small numbers, but apparently only in the south-east against the Portuguese — for example, an expeditionary force sent to the Hijaz in 1503 included 500 black arquebusiers, and another force serving in the Indian Ocean in 1505 included handgun-equipped Maghribis and blacks. More advanced handguns were introduced from Spain or Venice by a Maghribi c. 1506 but were not fully adopted until 1510, when Qansuh al-Ghawri was making strenuous efforts to drag the Mamluk military system out of the Middle Ages. That year another regular handgun unit was formed to fight the Portuguese, this being officially called the *At-tabaqa al-Khamisah,* though it was frequently referred to as the *al-Askar al-Mulaffaq* (the 'Patched-up' or 'Motley' army), the latter name deriving from the unit's heterogenous nature, it being comprised of Turcomans, Persians and even non-military artisans as well as Egyptians and probably blacks, even having awlad an-nas and, at one

*Cavalry were also occasionally employed from these same sources, though the al-Ashir, who were more rapacious brigands even than the Bedouins, were somewhat of a liability. The Turcomans, on the other hand, are described by one contemporary as 'incomparably better and more brave in the field than either the Arabs or Saracens of the country, or even the slaves [i.e., mamluks], and they are more dreaded.'

point, some Royal Mamluks drafted into it (1515). This unit was probably over 1,000-strong. Once again, however, the hostility of the amirs effectively led to it being utilised only against the Portuguese, so that when the Ottomans attacked in 1516-17 the Mamluks were way behind in firepower.

Artillery

The Mamluks had their first cannons (called *midfa*) by 1365-66 at the latest, and possibly by 1340 or 1342. Though references remain rare until the wars of succession of 1389-90, the sources thereafter attest a steady increase in the use of artillery until, by the reign of Qansuh al-Ghawri (who established a foundry in Cairo a few years after his accession) they were being produced at a prolific rate, quantities of 15, 70, 74 and 75 newly-manufactured cannon being recorded by a contemporary source (Ibn Iyas), including 4 some 25 feet in length. Although some were intended for shipboard use, most Mamluk artillery was used for siege-work and to defend the citadel and walls of Cairo, though in the sultanate's last years a great amount was also sent to defend the coastal cities (about 200 guns being assigned for this purpose in 1516, for example), and in addition Alexandria and Damascus at least had a fair quantity even in the 14th century, possibly as early as 1352 in the case of Damascus. By the very end of this period some amirs, like the nobility of Western Europe, even had artillery of their own, for the Ottoman sultan Selim I observed in 1517 that some of the guns he captured that year at the Battle of al-Raydaniya had been collected from 'the houses of the amirs'. (Others had been supplied by the Hospitallers of Rhodes.)

The *manjaniq* or trebuchet remained in use alongside gunpowder artillery throughout the Mamluk era, proving more effective than the latter in siege-work and therefore retaining pride of place until about the mid-15th century, despite probably being present in smaller numbers on most occasions. Thereafter, however, they seem to have virtually disappeared, though they were still to be found in Alexandria, and were still being made in Cairo, even as late as 1514.

The Navy

The Mamluks did not have a permanent navy, but built their fleets as and when required: being thus built somewhat hastily, they were not made to last and as a result soon became unserviceable — therefore none lasted long enough to be permanently maintained. Nevertheless, they had at least 4 or 6 galleys operating in 1424, and their 150-180 ships used in the invasion of Cyprus in 1426 undoubtedly included an even greater number, despite Piloti's statement that only flat-bottomed Nile barges were used. In 1440 Sultan Jaqmaq despatched as many as 15 or 18 galleys against Rhodes. Fleets were based principally in Alexandria and Bulaq plus Quseir on the Red Sea.

Artillery was being carried on Mamluk ships as early as 1366, when according to al-Maqrizi warships on the Nile bombarded Cairo's citadel during one of Egypt's interminable civil wars.

THE WHITE SHEEP TURKS

The Aq-Qoyunlu, to use their proper name, were a confederation of some 50 Turkish and Kurdish clans centred on Azerbaijan that had come into existence by the mid-14th century, the principal of which were the Bayandur, Purnak and Mowsillu. Despite the death in 1435 of their first great leader, Qara Yoluk, in battle against the rival Black Sheep Turks (the Qara-Qoyunlu), their power continued to grow throughout the 15th century until they controlled much of Persia, reaching its apogee under Qara Yoluk's grandson Uzun Hasan, commonly called the 'Little Turk' in western sources (to distinguish him from the 'Grand Turk', i.e. the Ottoman sultan), who reigned 1466-78. In this time they fought victoriously against both the Mamluks and the Ottomans, being decisively defeated by the latter only at Otluk Beli in 1473. Following the death of Uzun Hasan's son and successor Yaqub in 1490 dynastic struggles resulted in the collapse of Aq-Qoyunlu power, and the eventual overthrow of their sultanate by the Safavids in 1503.

From the Aq-Qoyunlu sultanate's early days its military forces were provided by the contingents of its confederate clans, with the clan chieftains generally maintaining their own nuclei of trained and paid soldiers, such as the sultan too maintained on a much grander scale. Caterino Zeno, one of several Venetian visitors to Persia in the 1470s, describes Uzun Hasan's royal standing army in 1472 as his *porta*, which Minorsky suggests is probably in this instance a translation of the Persian *dar-i khana* or Turkish *qapu* (see page 8), or even the Mongol *qahulgha*. By most accounts this central army appears to have comprised some 20-25,000 cavalry plus infantry: Contarini, another Venetian, was told that in 1475 Uzun Hasan campaigned with 'upwards of 20,000 [cavalry], or taking the good and the bad together, upwards of 25,000', plus infantry who 'might have amounted to 10,000' (though he was told in addition that 'great numbers' of infantry also remained behind). Josafa Barbaro, one of his informants, himself reported in 1475 that Uzun Hasan 'had

in all, as far as I could estimate, between 20,000 and 24,000 good horsemen; and the rest that came for the furniture of the camp were about 6,000 men'. Against the Georgians in 1477 he is again reported to have led 20-24,000 cavalry, plus 'about 11,000' infantry, and the usual Turcoman entourage of women, children and livestock, which elements Barbaro enumerated in a muster of 1474 as comprising 15,000 women, 11,000 children, 6,000 tents, 30,000 camels, 9,000 mules and asses, 25,000 draught-horses and pack-horses, 31,000 cattle, and a menagerie of hunting dogs, falcons, hawks and leopards. The military element on this latter occasion consisted of 15,000 'soldiers of the sword', who were seemingly slaves (probably the *boy-nokars* referred to below), 2,000 armed herdsmen and the like, 1,000 archers (probably the sultan's own *tip*, or bodyguard, since Barbaro records that at least 10,000 of the rest were also archers), plus other unspecified troop-types 'so that in all there might be about 25,000 good horsemen'. In addition there were 3,000 bow-armed infantry, and a support echelon that included cobblers, smiths, saddlers, fletchers, victuallers and apothecaries.

In addition to the royal army, under Uzun Hasan at least there were also provincial armies of similiar proportions based in Fars, Baghdad and Diyarbekr, plus smaller forces in Kerman, Isfahan, Qazrin and elsewhere. The full details of the organisation of one of these provincial armies (that of Uzun Hasan's second son Khalil, governor of Fars), as recorded by Jalal al-Din Davani in 1476, provide us in addition with a good idea of the composition of the central army itself. He enumerates the officers as *amir-i a'zam* (supreme amirs), *amir-i kabir* (great amirs), and ordinary amirs, plus officers with the rank of *tuvaji*, a title that probably meant 'public crier', whose duty was to shout orders to the troops, in addition to which they had a general responsibility for the men and their equipment. Other ranks were comprised of three different categories of soldier, these being: the *pushan-dar* or *pushan-push*, meaning 'clad in armour' or 'men in armour' (what we would call men-at-arms); the *tirkash-band*, meaning 'those wearing quivers' (i.e. archers, by inference lighter-armed than the pushan-push), who provided the largest part of the army; and the *qullughchi*, who were armed servants or attendants like the Ottoman oghlan or kul. The *Encyclopedia of Islam* says that the last category might have been slave-soldiers, i.e. mamluks; Davani does not himself clarify whether they were foot or horse, but Zeno in 1472 refers to mounted attendants who are doubtless qullughchi. The first two categories were certainly cavalry and were both called by the generic term *nokar*, derived from the Mongol *nokor* meaning 'friend' or 'companion', so as to distinguish them from the qullughchi. Organisation followed the Timurid/Tartar tradition, the basic unit being the *qoshun* (Mongol *khoshun*), officially of 100 men but sometimes seemingly numbering as few as 50.

The army itself was organised characteristically into centre (Mongol *Qul*, or *Qalb*), right wing (Turkish *Sagh*) and left wing (Turkish *Sol*). Davani gives the strength of these individual divisions as follows:

	Centre	**Right wing**	**Left wing**		
Pushan-push	932	2,392	1,931	=	5,255
Tirkash-band	3,014	3,752	3,721	=	10,487
Qullughchi	1,716	3,900	1,718	=	7,334
	5,662	10,444	7,370		23,076

Davani himself mistakenly gives the right wing total as 9,154 men. He also says that 3,944 of the centre and 5,802 of the left wing were nokars, when the actual totals are 3,946 and 5,652.

In addition to the above, which constituted the standing army, there were two additional elements which were reviewed separately, these being the *inaqs*, who were Khalil's own noble companions, and the *boy-nokars*. The latter were apparently mamluks belonging to Khalil's, therefore Uzun Hasan's, own clan, the Bayandur, their name deriving from the Turkish word for sept, or family; they constituted the prince's bodyguard. The strengths of these two divisions are recorded by Davani as follows:

	Inaqs	**Boy-nokars**		
Pushan-push	583	810	=	1,393
Tirkash-band	2,928	2,420	=	5,348
Qullughchi	3,098	—	=	3,098
	6,609	3,230		9,839

Besides all these there were in addition various small units of guards appointed for the province's assorted civil dignitaries, these totalling a further 68 pushan-push, 563 tirkash-band and 521 qullughchi, or 1,152 men in all. These individual units are listed as follows:

Pushan-push	30	—	—	—	—	—	—	—	38	—
Tirkash-band	50	100	?25	140	44	68	50	20	40	26
Qullughchi	40	100	?25	40	58	22	18	40	156	22
	120	200	50	180	102	90	68	60	234	48

Finally, 340 Kurdish amirs and 350 Shul chieftains were included in the particular review Davani recorded, who presumably provided irregular troops when called upon to do so. Even without these, the number of troops available to the province totalled an impressive 34,067 men.

When in the field the royal army was often joined by elements of one or more of the provincial armies as needs dictated. This was how an army Zeno saw in 1472 could number as many as 100,000 cavalry, 'some of them and their horses armed after the manner of Italy [i.e. heavily armoured], and some covered with strong, thick hides, able to save the wearer from any heavy blow. Others were clothed in fine silk with doublets quilted so thickly that they could not be pierced by arrows. Others had gilt cuirasses and mail corselets with so many weapons of offence and defence that it was a marvel to behold how well and skilfully they bore themselves in arms. Their servants [i.e. the qullughchi] likewise were excellently mounted with cuirasses of polished iron and in place of the shields which our people use, they have round shields, with which they cover themselves, and make use of the keenest scimitars in battle; the masters [i.e. the nokars] made a total of 40,000 men, all brave soldiers, and their servants 60,000, and a finer cavalry were never seen in any army.' (From what we have seen above, Zeno appears to have got his proportions of nokars and qullughchi the wrong way round.) The army Uzun Hasan led to defeat at Otluk Beli in 1473 included elements of at least two provincial armies as well as the royal army, one source recording of it that '40,000 mighty mounted lancers were counted, and he had 30,000 other soldiers as well'. Contarini records just 40,000 cavalry, while Zeno says the army was organised in 4 divisions, doubtless *tumans* of 10,000 men. This army included Kurdish, Tartar and Georgian contingents.

Artillery

Though artillery was probably first adopted in Persia under the Timurids (see below) it seems that Uzun Hasan was responsible for its introduction on a large scale during the 1470s. A 16th century source records that Uzun Hasan sent a request to Venice for '100 artillerymen of experience and capacity, who were immediately sent on to Persia, for in the matter of their artillery the Persian armies suffered greatly from a paucity of cannon, while on the other hand the [Ottoman] Turkish armies of Asia were very well equipped in this arm, and they could effect much damage in their attack.' Caterino Zeno reports that Venice actually sent '6 immense siege-guns, arquebuses and field-pieces in great number, powder and other munitions of war, 6 gunners, 100 arquebusiers, and other men skilled in artillery', while Barbaro, who actually accompanied these munitions in 1471, records that they comprised 'certain bombards, espringards and *schioppetti* [handguns], with powder, shot, wagons, and other irons of divers sorts to the value of 4,000 ducats', plus a company of 200 crossbowmen and handgunners. Either way, it proved impossible for these supplies to be landed on the Ottoman-held coast and they ended up in Cyprus.

Uzun Hasan nevertheless obtained some artillery during the next year, capturing 'numerous' pieces abandoned in flight by a routed Ottoman army, though the year after that he was decisively beaten at Otluk Beli by the artillery and handgun fire of another Ottoman army, against whom he does not appear to have fielded any of his own. Clearly the Aq-Qoyunlu must have started to take their artillery into battle with them soon after, since in the year of Uzun Hasan's death (1478), in a battle for the succession between his sons Khalil and Yaqub, it is recorded how Yaqub's skirmishers reached the position of Khalil's artillery (*tup*, cf. Ottoman *top*), 'but, as Khalil had reinforced the centre with guns and handguns [*tup-u-tufang*], the *tupchis* scattered the skirmishers with their handguns.'

Although at first much of their artillery was captured either from the Ottomans (whose terminology they also adopted) or the Mamluks (as in 1481), before long they were also casting their own, often on site as the Ottomans did, as for the siege of Tiflis in Georgia in 1489, where they cast one large and 12 small cannons. The Aq-Qoyunlu later even attempted to copy the Ottoman practice of setting up their artillery within a wagenburg, but unsuccessfully, as at the Battle of Alme-Qulaq in 1503.

THE TIMURID EMPIRE

Tamerlane (a corruption of the Persian *Timur-Lenk*, i.e. Timur the Lame) was in origin a minor chieftain of the Barlas, a Turkicised Mongol clan, who managed to create an extensive empire based on Transoxiana and its capital of Samarkand, of which he became ruler in 1370. At its greatest extent this empire included

Transoxiana, Khwarizmia, Persia, Azerbaijan, Afghanistan, Turkestan and parts of Iraq and Anatolia, in addition to which his armies smashed the Golden Horde and the sultanate of Delhi, humbled the Mamluks in Syria, and inflicted such a crushing defeat on the Ottomans at the Battle of Ankara in 1402 that their own empire was briefly in danger of collapsing entirely. However, Tamerlane's death in 1405 resulted in the fragmentation of the unstable power bloc he had created, with mutually hostile Timurid dynasties establishing themselves in Herat, Khorasan, Transoxiana and several smaller principalities. Of these the most important was that of Herat, ruled by his youngest son Shah Rukh (1405-47); after the death of Shah Rukh's son Mirza Ulugh-beg in 1449 it was conquered by the Aq-Qoyunlu, who went on to seize most of Khorasan in 1469, defeating and killing Ulugh-beg's grandson Abu Said. The decline continued thereafter, and Timurid rule in Persia finally came to an end in 1507, little more than a century after it had begun.

As with the Tartars of the Golden Horde (see page 72), organisation under Tamerlane remained exactly as it had been under Genghis Khan. Units therefore comprised the *onlik* or *arban* of 10 men, commanded by an *onbashi*; the *yuzlik* or *khoshun* of 100 men commanded by a *yuzbashi*; the *binlik* or *minghan* of 1,000 men commanded by a *binbashi* (also called a *ginbashi* or *mingbashi*); and the *tuman* of 10,000 men commanded by an amir. Units called *alai* also occur in the sources, probably binliks since their officers are often called *alai-beguys* (cf. the Ottoman *ala-bey*); similarly, the unit called a *fewdj* that is sometimes encountered, usually translated as 'squadron', was probably the same as the khoshun. On the battlefield all these units were grouped into left wing (*tchouwanghar*), right wing (*borounghar*), centre (*qul*) and advance guard (*manghlai*), the centre being comprised of the khan's guards and elite troops. Tamerlane's personal guard at the Battle of Kondurcha River in 1391 was selected from the bravest soldiers in the army and comprised 20 khoshuns, i.e. 2,000 men.

Few reliable figures are available for the total strength of Timurid field-armies, but 72,000 men were apparently involved in the 1398 campaign into Persia, and the army that marched aganst Delhi in 1398 allegedly comprised 92 binliks. Less credible figures are the 200,000 claimed for both the 1391 campaign against the Golden Horde and the proposed campaign against China in 1405, and the army of 240,000 that reputedly participated in the invasion of Syria in 1400-1. Any truth that there may be in such enormous figures can only be explained by the majority being non-combatants — the source that mentions the army of 240,000 in Syria actually says that it 'included' 30,000 soldiers, which seems to be independently confirmed by another source that says Tamerlane on this occasion 'led almost 30,000 men with him'. Ruy Gonzalez de Clavijo, who visited Tamerlane's court in 1404, actually wrote of the Timurid army setting out on campaign that 'when Tamerlane calls his people to war all assemble and march with him, surrounded by their flocks and herds, thus carrying along their possessions with them, along with their wives and children. These last follow the host, and in the lands which they invade their flocks — namely and particularly the sheep, camels and horses — serve to ration the horde . . . You must understand further that none of these Chagatais, when on the march with the host, ever separate from their women and children or from their herds and flocks.' He even refers to the soldiers' wives being employed in a tactical role on one campaign: 'Tamerlane issued orders that all the women who marched with his soldiers should don helmets along with men's war-harness to play the part of soldiers . . . Thus the camp was left in charge of the women disguised as warriors'. (Bertrandon de la Brocquière similarly refers to the readiness of Turkish women to bear arms, recording both that the Ottoman amir of Kayseri had 'under his command 30,000 Turcoman soldiers, and about 100,000 women as brave and as fit for combat as men', and that in Albistan, on the frontier with Timurid Persia, the Dhul-Kadiroghlu Turcoman confederation had '30,000 women who thus bear the *tarquais'*, as well as 30,000 men.)

All Timurid soldiers were paid 6-monthly, troopers receiving a sum equal to the market value of their best horse, or 2-4 times as much in the case of elite troops. Of their officers, the onbashi received 10 times the pay of a trooper, the yuzbashi 3 times as much as the onbashi, and the binbashi 3 times as much as the yuzbashi plus a grant of land, whilst the amirs received large estates akin to the Moslem iqta. Inevitably, the Timurids themselves, being Central Asian nomads (in fact mostly Turks, though they are often referred to as Mongols or Tartars for convenience), were all cavalry, with whatever small numbers of infantry they fielded being provided by sedentary subject peoples.

One interesting difference between Tamerlane's army and that of Genghis Khan was that whereas the latter, when he captured elephants in Khwarizmia made no attempt to use them in war but turned them out to die in the desert, Tamerlane seems to have been fascinated by those he captured in India. As many as 90, 100 or 120 were taken following the Battle of Delhi, and despite the poor showing they had made in the engagement most of them were subsequently taken into the Timurid army. Monstrelet's chronicle claims that Tamerlane's forces at the Battle of Ankara actually included 26 elephants which 'had small castles on

their backs, in which were many men-at-arms who grievously annoyed the enemy', while Schiltberger, who fought on the Ottoman side in the battle, puts the number at 32 'trained elephants', which were sent into action after midday. Mirkhwand and Sheref ed-Din likewise confirm the presence of elephants. Even after Tamerlane's death in 1405 Timurid armies continued to occasionally field elephants, as in the case of his successor Shah Rukh's army at the Battle of Alashkert (against the Qara-Qoyunlu) in 1421.

Gunpowder artillery may also have been introduced under Tamerlane — certainly the terms *ra'd* ('thunder') and *qarabugha* ('black camel'), both thought to denote gunpowder artillery, make their first appearance in 1379, when whatever weapons they denote are recorded by Muin al-Din Natanzi being used at the siege of Urganch. The same terms are also used by Nizam al-Din Dhami, who drew an unfavourable comparison between the Delhi sultanate's fireworks and rockets, as used at the Battle of Delhi, and Tamerlane's 'loud-throwing guns'. In Shah Rukh's reign a gun-founder named Farrukh is recorded to have made a *kaman-i ra'd* that could fire stones weighing 400 *maund.*

THE SULTANATE OF DELHI

During the early part of the period under review, and despite a renewed wave of determined Tartar assaults from 1297-1327, sultans Alauddin Khalji (1296-1316) and Mohammed ibn Tughluq (1325-51) succeeded in subduing and annexing virtually the whole of the Indian sub-continent, welding it into a single, albeit shortlived, Moslem empire. Indeed, Mohammed ibn Tughluq was called 'the Second Alexander' by some of his contemporaries, pushing the frontiers of the sultanate as far as the Deccan, an achievement that was unequalled thereafter until the rise of the Moghul dynasty in the 16th century. However, even before his death the sultanate had started to disintegrate into a plethora of lesser kingdoms (Bengal regained its independence following a revolt in 1337-38, and the Bahmani kingdom seceded in 1347), disintegrating entirely under his cousin and successor Firuz Shah (1351-88), with Khandesh, Malwa, Jaunpur and Gujarat all seceding between 1382-96. Of the sultanate's successor states the Bahmani kingdom, by far the most important, itself broke up c. 1490 into the 'Five Deccan Sultanates' of Ahmadnagar, Berar, Bidar, Golkonda and Bijapur.

The Tughluqids established a military system which persisted even after the demise of their dynasty, and we are lucky enough to have been left with fairly comprehensive details of its organisation in a 14th century work by Shihab al-Din al-'Umari (d. 1348). This tells us that under Mohammed ibn Tughluq the army comprised an improbable 900,000 horsemen, 'some of whom are stationed near the prince, while the rest are distributed in the various provinces of the empire.' He adds that 'they consist of Turks, Khitans, Persians and Indians, and people from certain other countries', which tallies closely with a description of the army of his predecessor Ghiyath-ud-Din Tughluq (1320-25) as comprising Ghuzz, Turks, Tartars, Persians, Tajiks, Hindus, Russians and Greeks (the last two doubtless in the capacity of mamluks). Those posted in Delhi itself, paid from the royal exchequer, were called the *hashm-i-qalb*, comprised of the *khasah-khail* or household troops, including the royal mamluks (Mohammed had 20,000 Turkish mamluks) and guards like the *Silahdars* and *Sar-i-Jahandar* (the sultan's bodyguard, 2,000-strong at this date) and the *afwaj-i-qalb*. The provincial troops, posted in garrisons throughout the empire, were called the *hashm-i-atraf*. Administration was in the hands of a minister called the *'arid-i-mamalik* (called the *sahib-i-'ard* or *'arid-i-jaysh* by the Bahmanis), who kept a descriptive roll (*huliya*) of the men and was responsible for pay, the commissariat, and the division of booty (in the army commander's presence). In addition he inspected the troops at least once a year, and selected those who were to participate in a particular campaign, though the sultan himself selected the commander. Under the Bahmanis the army commander was called the *amir-ul-umara* and customarily had a troop of 1,500 cavalry at his disposal.

The provincial troops were maintained in traditional Moslem fashion by the distribution of large iqta'at (usually called *jagirs*) amongst the nobility, who were thereby obliged, when called upon, to provide specific numbers of men at their own expense according to their rank. The highest in rank was the *khan*, who was to maintain 10,000 or more *sawars*, i.e. cavalry soldiers with one horse (al-'Umari says that Mohammed had 80 khans in his service); next came the *malik*, commanding 1,000 sawars; then the amir with 100 sawars; the *isfahla* or *sipah-salar* (a title that had once denoted the commander-in-chief) with less than 100; and finally the *sepoy*. A somewhat different list is provided for the late-13th century by Bughra Khan, second son of Sultan Balban (1265-87), who makes the lowest rank that of *sar-i-khail*, commanding 10 cavalrymen; he then makes the sipah-salar commander of 10 sar-i-khails, the amir commander of 10 sipah-salars, the malik commander of 10 amirs, and the khan commander of 10 maliks (therefore by inference 100,000 men). In practice, however, amirs tended to command 50-1,000 men, and maliks at least 1,000, while the Mongol term *tuman* was frequently used for a khan's unit in the 14th century (hardly surprising when one realises that many noblemen under the Tughluqids were of Mongol origin). Bahmani armies were similarly

organised, though they had units of 500 too, subdivided into 5 units of 100, and according to the 16th century chronicler Ferishta their highest rank was that of a commander of 2,000, reserved for the kingdom's provincial governors (who, we are told elsewhere, were nevertheless each expected to field 10,000 men). Much later, in the mid-16th century, Islamshah Sur reorganised the army into units of 50, 150, 200 and 500.

As has already been mentioned, al-'Umari claims that Mohammed ibn Tughluq's army consisted of 900,000 (9 *lac*) sawars. This is fairly certainly an exaggeration for 90,000, since his successor Firuz Shah is recorded leading precisely that number of cavalry in his first expedition against Bengal in 1354 (where he was confronted by 10,000 cavalry, 200,000 infantry and 50 elephants), and against Sind in 1362. The contemporary chronicler Barani similarly records that 'in the reign of Firuz Shah there was an army of 80,000 and sometimes 90,000 horse, exclusive of slaves'. In his second expedition to Bengal in 1359-60 Firuz Shah's army comprised 70,000 cavalry, 'innumerable' infantry, 470 elephants, 180 (or 980) standards, and '84 ass-loads of drums and trumpets'. These campaigns, however, were launched during the apogee of the sultanate's military power, before Firuz Shah's weak government had brought about a decline in the army's effectiveness. He discontinued the traditional annual inspections and abandoned the huliya, allowing substitutes to appear at musters. Barani records how 'horses of little value were often brought to the *diwan* and were passed as serviceable. Such stories often reached the sultan's ears, but he acted as if he had never heard them.' As a result bribery and corruption became rife; many soldiers indulged in commercial enterprises and failed to even appear at musters when they were still held. It is no surprise, therefore, that the sultanate could muster only 10-12,000 cavalry and 20-40,000 infantry to confront Tamerlane before Delhi in 1398.

Elephants

Although cavalry constituted the backbone of the army, and while infantry, mainly Hindus (see figures 34 and 35), were raised in sometimes enormous numbers, both on a regular basis and for specific campaigns, it was the elephants that were the pride of all Indian armies, and they were used in large numbers. In 1299 Alauddin Khalji is recorded to have had 1,500 war-elephants in his *fil-khana* ('elephant stables'), while al-'Umari wrote that Mohammed ibn Tughluq had 3,000 elephants 'of different kinds and sizes', of which probably only about a sixth to a quarter, therefore 500-750, would have been war-elephants, which tallies closely with the 470 and 480 elephants which Firuz Shah took on campaign against Bengal and Sind respectively in 1359 and 1362. The number of war-elephants that the sultanate could field declined dramatically along with the rest of the army in the late-14th century, there being only 120-125 in the army that confronted Tamerlane.

Delhi's various successor states are also recorded to have fielded large numbers of elephants in their armies — Barbosa records how the sultan of Gujarat 'always keeps 400 or 500 great and fine elephants', while according to an unreliable 17th century source Sultan Mahmud Sharqi of Jaunpur marched against Delhi with 1,400 war-elephants in 1452. The army which Mohammed Shah Bahmani (1358-73) led against Vijayanagar in 1366 included allegedly 3,000 elephants (as well as 30,000 cavalry and 100,000 infantry), a figure repeated by Ferishta for Mohammed Shah III (1463-82); this figure doubtless would have included both male and female elephants, exactly as did the 3,000 recorded for Mohammed ibn Tughluq.

These large numbers of elephants were obtained by an assortment of means. Some were obtained as booty, forming part of the sultan's traditional one-fifth share (512 were captured by Alauddin Khalji in Bengal in 1312, for example, and Mohammed Shah Bahmani captured allegedly 2,000 from the *raya* or king of Vijayanagar in 1366). Others were supplied in the form of annual tribute — 100 per annum from the raya of Arangal after 1318 and 40 from the sultan of Bengal after 1359 to quote but two instances, Orissa and Bengal sending annual tributes of elephants to Delhi right up until 1394; Bengal in fact remained the sultanate's principal source of elephants throughout this entire era, usually in exchange for horses. Yet others were purchased from Ceylon (Sinhalese elephants, though smaller, being deemed braver and wiser in battle than those of mainland India), or were captured in the wild. However they were obtained, for most of this period they belonged exclusively to the sultan, high-ranking noblemen, especially regional governors, only ever being granted permission to own very small numbers of them (usually at the most about 10) as a mark of special favour; only the Lodi sultans (1451-1526) and the Bahmanis allowed their nobles the freedom to possess as many elephants as they wished.

The sultan's elephants were commanded on the battlefield by officers called *shahnah-i-fils*. Usually there were two, one commanding the left wing and one the right, but sometimes both offices were held by the same man.

The 15th century Bahmani army

Athanasius Nikitin of Tver, who visited the Bahmani sultanate in 1470-74, has left us with an interesting overview of the state of its armed forces as they existed less than 2 decades before the sultanate's disintegration into the 5 independent Deccan kingdoms. Already the seeds of its collapse were evident, for Nikitin observes that the Bahmani sultan was in the power of his 'Khorasanian' nobles, who could field considerable armies. He specifically mentions Melik-ul-Tujjar, with an army of 200,000 men and 100 elephants, Melik Khan with 100,000 men, Kharat Khan with 20,000, and 'many' khans each with 10,000 armed men. The sultan himself (Mohammed Shah III) allegedly had in all 100,000 cavalry, 200,000 infantry and 300 elephants 'with citadels and clad in armour', to which his brother could add 100,000 each of horse and foot and another 100 elephants. In addition there were 20 Moslem viziers each with 10-15,000 cavalry, 20-30,000 infantry and perhaps 10 elephants, plus 6 Hindu viziers each with 40,000 cavalry, 100,000 infantry and '40 elephants in full armour, each carrying 4 men with long arquebuses.' With the exception of the elephants, probably most of these figures should be divided by 10 to arrive at the true numbers of the forces available.

Artillery

If the 16th century Persian historian Mohammed Kasim Ferishta is to be believed, gunpowder artillery appeared in India at a relatively early date. He says that in 1365/6 Sultan Mohammed Shah Bahmani 'despatched orders asking for cannon and *darb-zan* [light guns, firing shot of about 40 lbs in the 16th century] from all his territories. He collected a train of artillery, which had not been employed by the Moslems of the Deccan before then. He established a separate department for it under Muqarrab Khan, son of Safdar Khan of Seistan, who was a trusted nobleman, attaching to him Rumis and Farangis [i.e., Turks and Europeans] acquainted with the art of gunnery.' Other gunners were apparently provided by Persians, Abyssinians and Arabs. In his next battle against the army of Vijayanagar some months later Muqarrab's new artillery corps proved its worth, disorganising the Hindus so that a decisive cavalry charge was able to sweep them from the field.

It is debatable whether or not Ferishta's account, based on the 'Tuhfat-ul-Muslimin', is trustworthy, but many modern authorities tend to accept that in the Deccan at least artillery was in limited use by the end of the 14th century. From other sources we know that it was introduced into Kashmir in 1423, and into Bengal by the late-15th century. The sultan of Gujarat certainly fielded artillery against Malwa in 1422, attaining military supremacy over all his neighbours through his use of 'organised artillery'; by 1482 Gujarat was employing cannon and handguns shipboard too, as against the pirates of Bulsar. As we have seen, handguns also occur in Nikitin's survey of the Bahmani forces in the 1470s, where it seems from several passages that he considered them to be the principal weapon of the elephant crews.

Other firearms often found in use in India comprised grenades, fireworks and rockets, the last two doubtless having been introduced at some stage from China. Several sources record the sultan's elephants at Delhi to have been crewed or accompanied by *ra'd-andaz* (grenadiers), *atash-baz* (throwers of fireworks) and *takhsh-andaz* (firers of rockets), though none refer to what effect, if any, these had on Tamerlane's army. The fireworks at least, and possibly the rockets, were intended principally to scare the enemy's horses.

Older forms of artillery, i.e. the manjaniq (trebuchet) and *arrada* (ballista) are also often referred to in contemporary sources, sometimes used on the battlefield as well as in attacks on and the defence of fortresses, as by Mohammed Shah Bahmani at the Battle of Telingana in 1361.

THE KINGDOM OF VIJAYANAGAR

This South Indian state was founded in 1336 by two Hindu officers of Mohammed ibn Tughluq of Delhi, these becoming its first two kings (Harihara 1336-56, and Bukka I 1356-77) with the city of Vijayanagar as their capital. Throughout its existence this Hindu kingdom was almost continuously at war with its northern neighbours, the Bahmani sultanate and its Deccan successor states.

Details of the country's military organisation are not overwhelmingly abundant, and most of what information we have belongs to the 16th century rather than the 14th-15th. However, all the sources seem to agree on two fundamental points, which are (a) that a standing army was maintained, and (b) that it allegedly numbered in the region of *one million* men. (Incredible though this seems, it has to be borne in mind that by the end of this period the population of India was about 25% greater than the entire population of Europe.) Domingos Paes, for instance, writing of c. 1520-22, reckoned Vijayanagar's army as 'continually a million fighting men, in which are included 35,000 armoured cavalry; all these are in his pay, and he has

these troops always together and ready to be despatched to any quarter whenever it may be necessary.' Ferishta, writing of 1366, gives figures of 30,000 cavalry and 900,000 infantry, while Abd-er-Razzak, visiting the country in 1442, records that its troops amounted to 11 lac, or 1.1 million men. However, Duarte Barbosa, who visited India c. 1500-16, wrote in his chronicle only that 'between both horse and foot the king of Vijayanagar has more than 100,000 soldiers continually in his pay', while Fernão Nuniz, another early-16th century traveller, says that 'the king has continually 50,000 paid soldiers', amongst whom were 6,000 cavalry (the palace guard), 20,000 spearmen, 3,000 elephant-keepers (doubtless including their crews) and 1,600 grooms; these certainly seem more probable figures for the strength of the standing army, even though a million men may certainly have been available in all. Paes in fact states that 2 million men were actually available, the nobility being obliged to supply contingents according to the revenues of their domains. Fernão Nuniz says that the king's nobles were obliged to maintain 600,000 infantry and 24,000 cavalry, and that there were 200 of these nobles who are 'obliged always to be present with the king, and must always maintain the full number of soldiers according to their obligations'. Most Hindu armies would have included in addition many *kaijitagandru*, i.e. 'drawers of weekly (or daily) wages', in other words men hired only for the duration of a campaign rather than on a full-time basis.

For a campaign of 1522 Nuniz recorded the following individual contingents:

	Infantry	**Cavalry**	**Elephants**
The chief of the guard	30,000	1,000	6 (or 16)
6 provincial governors	50,000	2,000	20
	60,000	3,500	30
	100,000	5,000	50
	120,000	6,000	60
	80,000	2,500	40
	30,000	1,000	10
3 eunuchs ('favourites of the king')	40,000	1,000	15
The page of the betel	15,000	200	—
Kumara Virayya of Mysore	8,000	400	20
The king (Krishna Devaraya)	40,000	6,000	300
	573,000	28,600	551 (or 561)

The proportions of these figures are particularly revealing, confirming the overwhelming predominance of infantry in Hindu armies alluded to by innumerable contemporary chronicles. The proportion of infantry to cavalry is in fact something like 20 to 1, or even as high as 30 or 40 to 1 in a few instances, though there is — fairly inevitably — a far higher proportion of cavalry in the king's own contingent (these being the palace guard referred to elsewhere, of whom 200, or 500 according to Paes, constituted the royal bodyguard); the king's contingent also has far more elephants than any of the others — 1 per 20 cavalry, as opposed to the average of 1 per 100 cavalry (or 2-3,000 infantry) apparent in the other contingents. The kingdom could muster about 1,000 elephants in all (Barbosa says 'more than 900', Nuniz mentions 800, and Abd-er-Razzak says 'more than 1,000', though in one passage Ferishta mentions as many as 3,000). Overall, the ratio of infantry to cavalry and elephants for the entire army is on the lines of 1,000:50:1.

The disproportionately small number of cavalry resulted from a scarcity of horses in South India as is explained in the note to figure 160 (page 180). Barbosa and other authorities explain how the king regularly imported considerable numbers of horses at great expense and distributed them among his principal ministers and the nobility, who were subsequently expected to maintain them 'and continually give him accounts of them. In the same way he gives them to other noblemen. To the cavalry soldiers [i.e. of the standing army] he gives one horse each for his own riding; a groom and a slave-girl as servants; and a monthly allowance of 4 or 5 *pardaos* as the case may be [paid every 4 months according to Abd-er-Razzak]; and daily rations as well for the horse and groom'. Domingos Paes adds that 'some who are of higher rank have 2 horses or 3, though others have only one.' All in all it is clear that only about 30,000 cavalry were normally available to the kingdom, this figure frequently occurring in the sources, and from Nuniz's description it is clear that four-fifths of these were provided by the nobility. Surprisingly, some of them were Moslem mercenaries; Moslem mercenary cavalry had been employed in the kingdom since Devaraya I's reign (1406-22), and by the time of Devaraya II's accession in 1430 there were as many as 10,000. The only larger number of Moslems to be found in Hindu employ in this period is that of 20,000 recorded by Ibn Battuta in the army of Vira Ballala III, raya of Hoysala (d. 1342, upon which the kingdom was annexed by Vijayanagar).

Organisation was fairly certainly on a decimal basis, and multiples of 50, 100 and 200 are often encountered.

Nuniz in one passage records 2,000 men under 40 or 50 captains. The smallest recorded unit now, as in Alexander the Great's time, was called a *padi* or *patti*, commanded by an officer variously called a *padinayaka, padiraya, padalu* or *padavalu*. In ancient times this had theoretically comprised a chariot, an elephant, 3 horsemen and 5 infantry, and though its size in the mediaeval period is unknown it was clearly larger, but nevertheless remained a self-contained unit of infantry, cavalry and elephants (chariots having fallen out of use by the 7th century); the Bahmanis seem to have copied this type of all-arm unit from the Hindus, calling it a *lashkar*. Next unit in size was called a *dala*, meaning a 'part' or 'fragment' of the army (i.e. a division), and its commander was called a *dalavayi*. An army commander was called a *dandanayaka* or *dannayaka*, the word *nayaka* indicating a military chieftain.

Catapults are often mentioned being used in the defence of cities, and gunpowder artillery, largely crewed by Moslem renegades, was certainly in use by the end of the 15th century. Indeed it may have been in use even in the 14th century, several authorities rendering an unclear passage in Ferishta's history as a reference to the king of Vijayanagar fielding '3,000 cannon and darb-zan' (or '300 gun-carriages' in Briggs' translation) in 1365/6; however, the reference is in fact probably to grenades or fireworks rather than artillery, since elephant crews were frequently, if not usually, equipped with such devices (and interestingly Ferishta records 3,000 elephants in the army on this occasion — 3,000 being his favourite figure). Varthema, writing of 1506(?), records that 'this race of people are great masters in the art of making fireworks', which were used with considerable effect against elephants.

SERBIA

Serbia became, briefly, a military superpower during the middle part of the 14th century under the dynamic Stephen (Stefan) Urosh IV Dushan (1331-55), who succeeded in conquering an empire — largely at the expense of the Byzantines — that included Macedonia, Albania, Epiros and Thessaly, reaching from the Drina and Danube rivers as far south and east as the Gulf of Patras and the Rhodope Mountains by 1350. He set his sights on Constantinople itself, dividing his lands into 'Serbia' and 'Romania' and, after 1345, calling himself Emperor (*Tsar*) of the Greek Lands of Romania; he even modelled his court on that of Constantinople, calling his officials by Byzantine titles such as caesar, despot, sebastokrator and *logofet* (logothete). However, following his death this empire disintegrated under his successor Stephen Urosh V (1355-71). One Byzantine chronicler noted with evident satisfaction that the Serbian nobility were soon divided into '10,000 factions', while John VI Cantacuzene wrote that Dushan's empire fell 'into a thousand pieces'. The principal individual despotates, as they were called, that resulted from this disintegration were based on Serres, Prilep, Skoplje, Trikkala, Ioannina, Epiros, Kossovo and Kjustendil (Velbuzhd, held by a Bulgarian dynasty). Prilep took pre-eminence in the south, until the defeat and death in 1371 of its despot Vukashin (made king and co-ruler of Serbia by Urosh V c. 1365) at the hands of the Turks enabled Stephen Lazar to take control — to a greater or lesser degree — of most of the country, especially after the defeat in 1373 of his most powerful rival, *Zupan* Nikola Altomanovic. It was Lazar who led the Serbs in one of their only major victories over the Ottomans, in 1387, though he was spectacularly less successful at Kossovo Pole in 1389, which engagement he lost along with his life. His son Stephen Lazarevic succeeded him, but as an Ottoman vassal acknowledging the suzerainty of the sultan. He reigned until 1427, to be succeeded in turn by his cousin George (Djuradj) Brankovic, whom the sultan distrusted to the extent that several punitive expeditions were launched against the despotate, including that which all but liquidated it in 1439. The final conquest of Serbia dates to June 1459, when its last capital, Smederevo, fell to the Turks, upon which its despot went into exile in to Hungary.

The Serbian army was feudal in nature, though its system of military landholding was inherited from the Byzantine pronoia rather than the Western European fief. The pronoia itself — hereditary by some accounts, non-hereditary by others — is only first recorded in Serbia under that name in 1299 (the Serbs spelt it *pronija*, or *pronya*, and called its holder a *pronijar*), but even from as early as Stephen Nemanja's reign (1186-96) every able-bodied man possessing a *bashtina* (a grant of hereditary freehold land, the holder being called a *bashtinik* or *voynici**) had been obliged to attend the army whenever required, only monastic tenants being exempted in exchange for performing part-time garrison duties in local fortresses and fortified monasteries. The building and maintenance (*gradozadanje*) of such fortresses, and equally the maintenance of their permanent garrisons (*gradobljudenije*) was an additional aspect of the feudal responsibilities of the population of each *zupa* (district), who were also responsible for guarding their own frontier. The holders of both bashtinas and pronijas constituted the nobility (though many of the former were only upper-class peasants), and these were the principal native element of every Serbian army, serving as heavy cavalry (the pronijars) and infantry (the voynici). In fact most armies included only the nobility (the *vlastelini*, or 'holders of power')

*Or *voynuk*. See page 6.

and their retinues, maintained at their own expense, but in times of emergency the arrière-ban, called the *Zamanitchka Voyska* ('All Together'), would be summoned. As elsewhere, this comprised all the nobility and every able-bodied freeman. For further details of Serbian feudal organisation see *Armies of Feudal Europe* (2nd Edition).

In border regions all land-grants appear to have been called *krayina* and their holders *vlastele krayishnik* ('border lords'), whose duty it was to guard the frontier. The 'Code Dushan' of 1349 (the *Zakonik*, extended and completed in 1354) actually states that any damage inflicted by an invading army had to be compensated for by the border-lord through whose lands the enemy had entered, another article stating that similar pillaging committed by brigands had to be repaid seven-fold. The Byzantine chronicler Gregoras, as ambassador for Andronikos III to Dushan, encountered some *krayishnici* (men of a border-lord) on crossing the frontier. He wrote: 'When we passed the Struma River . . . and came into thick woods, we were suddenly surrounded by men clad in black woollen garments, who darted forth from behind trees and rocks like devils out of the earth. They wore no heavy armour, being armed only with spears, battle-axes, and bows and arrows.'

From the 11th century on the commander-in-chief of the army was the king (*kral*), a *veliki vojevoda* or 'high military chief', equivalent to the Byzantine Grand Domestic, being appointed in his absence. However, since any call to arms had to be approved by the *Sabor* (the National Assembly) the king actually had limited military power, in effect being no more than a glorified Grand Zupan, or elected tribal leader. Although Dushan stripped the Sabor of much of its power, the crown's dependence on a permanent nucleus of mercenaries that was not subject to the assembly's whims had by then already evolved, constituting the core of all Serbian armies throughout this period. Under Stephen Urosh II Milutin (1282-1321) these mercenaries included such diverse elements as Cumans; Anatolian Turks (some 1,500 were employed in 1311 from amongst those who had been allied to the Catalans in Thrace and Macedonia); Tartars from South Russia; and Christian Ossetians (*Jasi* in Serbian and Russian sources) from the Caucasus. However, it was Western European heavy cavalry which soon came to predominate. As early as 1304 a certain Franciscus de Salomone is mentioned in an inscription in Trévise as having distinguished himself in the service of 'Orosius, rex Rascie' (i.e. Urosh, king of Serbia). Mercenaries in Stephen Urosh III's army that defeated the Bulgarians at Velbuzhd in 1330 were comprised of 1,500 Aragonese, Spaniards and Germans, and it was the latter who seem to have predominated during Dushan's reign. The papal legate to his court reported seeing 300 German mercenaries there under the knight Palmann Bracht, who held the rank of *capitaneus*. In addition we know that the Serbian troops supplied to the Byzantine Emperor, John VI Cantacuzene, in 1342-43 were Germans, and that the troops garrisoning Berroia in Macedonia in 1341-50 were German mercenaries too. Even at the Battle of Kossovo in 1389 it is significant that many of Lazar's men were German and Hungarian mercenaries according to a Florentine account, while a mid-15th century Ottoman source reports that his army included Wallachians, Hungarians, Bohemians, Albanians, Bulgarians and Franks, doubtless chiefly mercenaries. Another says he employed many mercenaries from among the Serbians themselves as well as the Hungarians, Bosnians and Albanians. Serbian documents indicate that as well as Germans the other predominant European mercenary elements comprised Spaniards (possibly as many as 1,300-strong at one point) plus Hungarians, Frenchmen, Italians and Swiss. One prominent name to appear in their ranks was that of Philippe de Mézières, in later life Chancellor of Cyprus and one of the last protagonists of the Crusade. Inevitably, in the 15th century Ottoman auxiliaries were also used, for example by Vuk Lazarevic against Stephen, 1409-13. In addition to the king or despot, the larger cities also employed some mercenaries of their own to back up their militia.

When the Ottoman hold on Serbia weakened after the Battle of Ankara, Stephen Lazarevic took advantage of the situation to establish his independence from the Turks. Recognising the king of Hungary as his overlord he built up a small regular army, on the basis of a newly imposed levy known as the *vojstatik*, which was stationed in the country's 11 major fortresses as well as several of its small walled towns. This army included many Hungarians and was well-equipped with cannon and handguns; for example, there were 2 cannons in the fort guarding the large silver mine at Srebrnica in 1425, and in Belgrade, Lazarevic's capital, there was a large bombard (called *Humka*, meaning 'Knoll') captured from the Bosnians the same year. In 1455 there were as many as 3 large cannon, 5 other guns and 55 handguns in the fort guarding the great silver mine at Novo Brdo.

Serbia had adopted gunpowder artillery from Dubrovnik (Ragusa), where a centre for the manufacture of wrought-iron cannon existed by 1363. (The first gun foundry in the Balkans, casting bronze cannons, was also established at Dubrovnik, in 1410.) Neighbouring Bosnia had cannon by 1380, and they were in use in Serbia by 1382-86 at the very latest, probably served and certainly made by Ragusan engineers. In fact M. Orbini claims that Despot Lazar used guns against Nikola Altomanovic even as early as 1373. Guns were apparently employed in the field by the Serbians as early as 1389 at the Battle of Kossovo, being clearly

mentioned in one later Ottoman chronicle (Neshri) and alluded to in a contemporary Serbian source which says that 'fiery explosions thundered, the earth roared greatly, and the air echoed and blew around like dark smoke'; we know too that King Tvrtko of Bosnia (1353-91) brought one gun, a gift of the Italians, with him to the battle. The Serbian contingent in the Ottoman army defeated at Ankara in 1402 also had artillery, but as at Kossovo it failed to affect the outcome, probably for the same reasons on both occasions — i.e. the guns were too small to be effective in order that they might be manoeuvrable on the battlefield. In siege-work trebuchets and ballistae remained in service alongside gunpowder artillery for a long time.

In addition to her land forces, Serbia occasionally also had a very small fleet, provided by the communes of Dulcigno (modern Ulcinj), Budua (Budva) and Cattaro (Kotor), sometimes by Ragusa (in exchange for a year's tax-exemption), and briefly by Venice (which provided 4 new galleys, the *galee domini imperatoris*, in 1350, the subsequent fate of which is unknown). King Tvrtko of Bosnia too later constructed his own small fleet, with a Venetian as its admiral, and was similarly given a galley by Venice, this time fitted with a cannon.*

Field-armies

Serbian armies were comprised of lance-armed light and heavy cavalry, plus infantry (armed with spears, axes, and above all bows and, later, crossbows) and a baggage-train (*komora*) manned by shepherds and cattlemen referred to as Vlachs, probably indicating that they were Pindus Vlachs and Albanians, and perhaps Wallachians too. Most of their armies tended to be small because of the difficulties involved in supplying them in the field, and on the whole they could probably raise only about 12,000 men in the late-14th century, the army at Kossovo probably numbering at most 20-25,000 men even including allied contingents. The majority were cavalry. The largest Serbian army on record in this period was that raised by Dushan in 1355 for his proposed attack on Constantinople, which numbered 80,000 men according to later Ragusan chronicles. Modern authorities, however, give this figure little credence.

Serbian contingents in Ottoman armies

Serbia became an Ottoman tributary after the decisive defeat of Vukashin at Cernomen in 1371, and a vassal state, with her nobility individually swearing loyalty to the sultan as his vassals, as a result of Stephen Lazar's catastrophic defeat at Kossovo. According to most authorities it was from 1390 on, as a result of this latter humiliation, that the despot of Serbia was obliged to pay an annual tribute of 1,000 lbs of gold and to provide the sultan with a contingent of 1,000 cavalry when called upon. Finlay and Creasy, however, maintained that it was 'the treaty of 1376' that first imposed this obligation, while Gibbons says 1386; certainly there were Serbs as well as Bulgarians and Byzantines in the Ottoman army that fought against the Karamanli Turks in Anatolia in 1387 (the Serbs being promised booty in return for their services), and there were even Serbs, and Greeks too, in Murad's army during the Kossovo campaign, under Konstantin Dejanovic of Kjustendil and Konstantin Dragash of Serres (though they were not actually involved in the battle — probably Murad did not trust them). Finlay says in one of his books that Sultan Bayezid actually demanded the service of the same number of Serbians as the Byzantines had called for after Manuel's subjugation of Serbia in 1150, i.e. 2,000 to armies serving in Europe and 500 to armies serving in Asia; but in another book he says that the figure was only 'subsequently increased to 2,000 men' when Bayezid was gathering his forces to confront Tamerlane in 1402. Bertrandon de la Brocquière, in his 'Travels' of 1432-33, recorded of the despot of Serbia that 'every time the sultan sends him his orders, he is obliged to furnish him with 800 or 1,000 horse, under the command of his second son.' Elsewhere he adds how he had heard that 'in the most recent army [supplied to the sultan] from Greece, there were 3,000 Serbian horse, which the despot of the province had sent under the command of one of his sons. It was with great regret that these people came to serve him, but they dared not refuse.' (This army was probably that which campaigned against Albania in 1430-31, in which Serbs are known to have been present.) Konstantin Mihailovic reports that when the treaty with Serbia was renewed under Mehmed II the obligatory tribute was set at 1,500 lbs of gold and a contingent of 1,500 cavalry.

Amongst the battles in which Serbs fought for their Ottoman masters were Rovine, against the Wallachians and Bulgarians, in 1395; Nicopolis in 1396, where apparently their contingent comprised 5,000 cavalry; and

*Technically an Hungarian tributary state, Bosnia became a kingdom in 1377 when its *ban*, Tvrtko, proclaimed himself king of Serbia, Bosnia and the coastal regions after occupying a 'large and important part of Serbia'. The kingdom managed to last only until 1463 (when the Ottomans occupied it), chiefly by playing Turks and Hungarians off against one another. Its armed forces comprised the feudal retinues of its zupans, each based on a nucleus of kinsmen, often backed up in the 15th century by Ottoman auxiliaries only too willing to assist disaffected Bosnians to kill other disaffected Bosnians.

Ankara in 1402, where Doukas says there were 5,000 'encased in black armour' and Chalkokondyles that there were an unlikely 10,000 (though the Ottoman chronicler al-Anwari says that there were 10,000 Serbs and Wallachians altogether). George Brankovic even supplied an unwilling contingent (of 1,500 horse under the voivode Jaksa Brezicic according to Mihailovic) for the final siege of Constantinople in 1453, plus some silver-miners from Novo Brdo whom Sultan Mehmed employed as sappers. In 1473 the army that marched against Uzun Hasan included 'many Christians — Greeks, Albanians and Serbians — in their number.'

ALBANIA

The Albanians were descendants of the ancient Illyrians. Ptolemy mentions a city of Albanopolis and a tribe called the Albanians as early as the 2nd century, and by the 11th century the name had been extended to cover all of the Illyrian tribes. Part of the Byzantine Empire until the late-13th century, during the early part of the period covered by this volume much of Albania was held by the Angevins of Naples, who deemed it a kingdom (1271-1368), and the Serbs under Dushan (1343-55), though the Byzantine despots of Epiros and then the Morea also retained parts until well into the second half of the 14th century. After the death of Dushan the northern part of the country, modern Montenegro, became independent under George Balsha, who with his sons set up his capital at Scutari (Shkoder), and in 1368 he and his erstwhile enemy Charles Thopia, who had adopted the title Prince of Albania, in addition seized the Angevin possessions; of these, the Navarrese Company (see page 28) succeeded only in recapturing Durazzo (Durres) in its campaign of 1376. George Balsha died in 1385 fighting against the Ottomans at the Battle of Savra, where he allegedly confronted an army of 40,000 with just 1,000 men. From the 1380s on Ottoman pressure mounted, and the Balshas were obliged to have recourse to Venetian aid, in exchange for which between 1392-95 they had to hand over Durazzo, Alessio (Lesh) and Drivasti. Hostilities with the Venetians subsequently became almost as commonplace as those with the Turks, and although the Albanians, utilising the mountainous nature of their countryside to best advantage, usually prevailed in the field (especially under their talented commander Stephen Crnoievic, 'the Black Prince', who in addition fought and defeated the Ottomans in *63* battles and skirmishes in the period 1424-36), Venice nevertheless managed to expand her Albanian possessions by purchase and conquest so that by 1444 she held Alessio, Drivasti, Dagno, Satti, Scutari, Durazzo, Dulcigno and Antivari.

The Ottomans had in the meantime proceeded to consume the divided country piecemeal, often being invited in by rival chieftains wanting their help against one another. They were exercising direct control over some areas as early as the 1380s, and over most of central and southern Albania by the early 1430s (Kroya was captured in 1415, Valona, Kanina and Berat in 1417, Girokastra in 1419, Ioannina in 1431, and Serres in 1433). Sizeable Albanian auxiliary contingents had therefore started to appear in Ottoman armies in the late-14th century. The country became a sancak of the Ottoman Empire in 1430, and in 1440 a certain Iskender Bey was appointed sancak bey of the province. This was the celebrated Scanderbeg (a corruption of his Turkish name), an Albanian whose real name was George Castriotes, who had been reared as a hostage at the Ottoman court in Adrianople. In 1443 he rebelled against the Turks and, with just 300 horsemen, seized the city of Kroya and began a resistance movement that freed much of the country, as a result of which an Albanian League (the League of Lezha) was formed, with Scanderbeg as commander-in-chief of its armed forces. He did not receive universal support, however, and he often had to overcome stiff, even martial, opposition from many of the highland chieftains, who were so opposed to his undisguised attempts to unite the country under his sole leadership that some of them actually welcomed Ottoman armies as their liberators. Nevertheless, despite the frequent setbacks that were to result from the treachery and desertion of various chieftains over the years, Scanderbeg was able to resist and repel repeated Ottoman counter-attacks right up to his death in 1468, winning over 25 battles against them, including several massive sieges of Kroya. Thereafter Albanian resistance faltered, though Turkish attacks were more or less successfully weathered until 1477 under the country's new leader Lek Dukagjin, one of Scanderbeg's old lieutenants, in alliance with the Venetians, who following Scanderbeg's death had been permitted to instal garrisons in Kroya and other fortresses in additon to those they already held. However, Ghin Musachi, a contemporary, recorded of the annual Ottoman inroads that 'the forces of the Turks always increased while ours decreased; almost all the young men of Albania were killed; there were only a few old men left, and their forces were exhausted, and their states dwindled.' Subsequent campaigns therefore saw the gradual reduction of the Venetian and Albanian garrisons, until the signing of a treaty in 1479 left Venice with just 3 coastal strongholds, those of Durazzo, Dulcigno and Antivari. The rest of the country (except for inhospitable Montenegro) now belonged to the Ottomans.

Burchard, who travelled c.1308, reckoned that at that time the Albanians were capable of fielding 15,000 cavalry, an estimate that is doubtless a little on the low side; in 1378, for instance, George Balsha and Charles Thopia invaded Bosnia with 10,000 men, and Stephen Crnoievic alone fielded 7,000 against the Ottomans

in 1448. Admittedly these were all extremely powerful chieftains holding large parts of the country, but even Scanderbeg's father, John Castriotes, a relatively minor chieftain, was able to offer the Venetians the service of an auxiliary contingent of 2,300 cavalry in 1411 (in exchange for 1,000 ducats a year). Scanderbeg's army never exceeded about 18,000 men. Its core comprised some 8-10,000 men, chiefly light horse who are described in the 'Commentarii' (attributed to Pope Pius II) as 'lightly armed cavalry, swift horsemen, good for looting and plundering'.* About 2-3,000 of them (a 15th century Italian source says 3,500) constituted the household troops, whose names and acts of bravery, so we are told by Melchior Michaelis (15th century?), Scanderbeg knew by heart, and whose sleeping quarters and meals he shared 'as a common soldier'. These included what Barletius described in the late-15th/early-16th century as Scanderbeg's *praetoria cohors*, a personal bodyguard made up entirely of soldiers from Kroya, probably numbering 6-800 men (see below). A further 3-5,000 men were posted on Albania's eastern frontier under Scanderbeg's uncle, Moise Golem, from whose lands (the two Dibras) they were largely recruited. Of all of these troops, the majority were therefore raised from the Castriotes family lands. At the most only about a quarter were provided by Scanderbeg's allied chieftains and nobility whom, as we have already seen, he had good cause to distrust. (In fact he actually took every opportunity to replace them with his own officers, one of the means by which he was able to consolidate his position and weld together the League's loose confederation of independent chieftains.) At Abulena in 1457 only 5,000 of the army of 17,000 were provided by League chieftains.

In addition a further 10,000 or so men could be raised by recourse to a general call to arms. In 1450, for instance, Scanderbeg increased his forces to 18,000 men by this means; of these, 1,500 were sent to garrison Kroya under Count Vrana Altisferi, 8,000 were held back by Scanderbeg himself (doubtless his central army), and the balance were organised into small detachments to harass and ambush the approaching Turks (who were commanded by the future sultan Mehmed II). In addition there were further troops to be found scattered across Albania as fortress garrisons, each of 400-2,000 men, comprising infantry and, by Scanderbeg's time at the latest, artillery too.

Scanderbeg's forces probably had gunpowder artillery and firearms from the outset, at least for the defence and siege of fortresses. Kroya, for instance, had about 30 small cannon in 1450. It seems likely that it was introduced into Albania by the Venetians in the second half of the 14th century for use in their own fortresses, a capacity in which they continued to maintain sizeable ordnance thereafter (5 bombards, 6 bombardelles and 20 handguns in Scutari in 1452, to mention but one example). The largest train of artillery recorded in use by the Albanians on any occasion during the 15th century appears to have been that fielded for the siege of Berat in 1455, where Scanderbeg's 14,000-strong army was provided with 5 bombards and 13 cannon plus 500 handguns (the latter also being recorded in use by Albanian troops during the defence of Sfetigrad in 1448).

One further source of troops was provided by foreign mercenaries and auxiliaries. In 1450, for instance, we are told that Scanderbeg's field-army included 'Slavs, Italians, Germans and others' (the 'others' undoubtedly including Hungarians), and in 1451 his ally Alfonso V the Magnanimous, Aragonese king of Naples, provided him with several hundred Catalans. A few years later, in 1455, Alfonso may have provided a force of as many as 2,000 men plus some artillery, though the sources actually differ regarding its size; the most reliable claim it comprised either 500 handgunners and 500 archers (Barletius), or 1,000-1,200 infantry and 500 cavalry (Makusev). Its commanders were Tesso Sabello and Sancto Garillo. In 1460-61 Scanderbeg returned the favour by providing Albanian troops to support Alfonso's successor, Ferdinand I, against his Neapolitan barons and the French claimant to the throne, René d'Anjou. Scanderbeg himself led the 1461 contingent, which an Albanian envoy to Ferdinand described as numbering 1,000 horse and 2,000 infantry archers, figures which are confirmed in addition by a Milanese envoy in Venice. Another source, however, mentions only 2,000 men in all, while three other contemporaries speak of a contingent of 600, 700 or 800 cavalry, this probably representing Scanderbeg's personal guard unit from Kroya.

WALLACHIA

Wallachians, or Vlachs (Byzantine *Vlachoi*), are first mentioned in Byzantine sources — retrospectively — in Cedrenus' 11th century chronicle, referring to c.976. From the late-10th century onwards they frequently appear in the context of Byzantino-Bulgarian conflicts, and it was the Wallachian leaders Peter, Assen and Kalojan or Ioannitsa who were responsible for the foundation of the Second Bulgarian Empire in 1186. According to legend Wallachia itself came into existence in 1290 when the Transylvanian voivode Radu

*He adds that they were 'useless for warfare according to the Italian style, and helpless against our swords and our spears', which is probably true enough of a close melee between Albanians and heavily-armed condottieri. The Albanian forte, however, lay in skirmishing and ambushes, not formal set-piece battles.

Negru led many Roumanins to settle there. In c.1307 or 1310 it became an Hungarian banate under a Cuman* chieftain, Basarab (d. 1352), under whom it achieved independence following his defeat of King Charles Robert at Posada in 1330. This independence was shortlived, however, since in 1392/3 the principality became tributary to the Ottoman Turks, under whom, despite frequent rebellions throughout the 15th century, it nevertheless retained its autonomy, even after it had become a vassal state in 1476.

Its armed forces were comprised of two distinct elements, called the 'lesser army' and the 'greater army' respectively. Whereas the latter constituted the arrière-ban, the former was an infantry and cavalry force comprised of the voivode's (prince's) retinue and standing troops, the troops of the *slugi* or boyars, and the so-called 'district banners', made up of fortress garrisons and landowning peasants led by their individual district *pircalabi* (sheriffs). Principal element was the *curteni*, the court bodyguard of infantry and cavalry, its name being derived from *curte* ('court'); the same term could also indicate men serving the local military administration. Under the infamous Dracula (Vlad Tepes, 'Vlad the Impaler', 1456-62 and 1476) many of the curteni were provided by *viteji*, landowning peasants promoted to the lesser nobility as a reward for bravery on the battlefield, and it is doubtless these to whom a contemporary account alludes when it describes how he 'enlisted a number of noble and faithful horsemen and foot-soldiers whom he gave the money and riches of those killed'. Nevertheless, it is clear that the viteji were less numerous and their role less important than in neighbouring Moldavia (see below). Standing troops seem to have originated under Vlaicu Voda (Vladislas I, 1364-c.1377). It is claimed that under his grandson Mircea cel Batran (Mircea the Old, 1386-1418) they numbered as many as 18,000 infantry and 17,000 cavalry, but a more accurate idea of their numbers can probably be drawn from the establishment of a bodyguard of just 1,000 men, including 100 cavalry, by Dan II (1420-31), and a reference by Doukas to Vlad Dracul's curteni on one occasion numbering just 300 men. The small number of chiefly foreign mercenaries to be found in Wallachian employ from the beginning of the 15th century usually formed part of the curteni, as for instance did the Hungarians and Moldavians provided to Dracula by King Matthias Corvinus and Stephen the Great. One cavalry element of Mircea the Old's standing forces called the *scutelnici* or 'substitutes' indicates that some mercenaries at least were maintained by scutage.

The 'greater army' appears to have first been called up under Basarab, though the term itself is only first to be found in Wallachian sources at the beginning of the 15th century, being mentioned especially under Mircea the Old and Dracula. Requiring the voivode's personal presence in the army, it was a call to arms used in times of national emergency, involving the military service of all men aged 12 or over capable of bearing arms. It is recorded by two Italian ambassadors that when Dracula utilised this levy in 1462 he raised his forces to 22,000 or 24,000 men thereby, though another account claims 30,900. Its officers appear to have been provided by the viteji. An additional contribution made by Wallachia's peasantry to the armed forces was that of providing the 'district banners' mentioned above, a selective levy which formed part of the lesser army. These were raised on the basis of fixed quotas of men being supplied from each town and village when required, these being recruited by the voivode's sheriffs rather than the local boyar, which meant, therefore, that the boyars' troops were comprised solely of their own retainers, and that the chances of dissent amongst the nobility were minimised by this limitation of their armed strength. (Even so, under a weak voivode the power of the boyars was such that their consent was often required before military action could be taken.) It seems probable that the quotas of men required from the villages were very small, since even large towns appear to have supplied only 50, 100 or 200 men. Organisation was clearly decimal.

Wallachian field-armies were never particularly large, and often included a considerable proportion of infantry. Western chroniclers' estimates of 10,000 Wallachians at Nicopolis in 1396 can probably be dismissed out of hand — modern estimates would have it that there were no more than 2-3,000. The Italian traveller Torzelo estimated in 1439 that the Wallachian army numbered 15,000 men 'ranking among the most valiant in the world', doubtless referring to the combined elements of the lesser army. Vlad Dracul led 6-7,000 men to join Hunyadi's army in October 1444, and at least 4,000 (organised in 4 companies, i.e. 1,000 men in each) were present at the Battle of Varna, while Vladislas II led a similar number (7-8,000) at Kossovo in 1448. The largest figure for a Wallachian army in this period belongs to Dracula's reign, for as we have already seen he allegedly raised 22-24,000 men in 1462 (though Chalkokondyles says he had only 7-10,000, probably referring only to the lesser army). Whatever it lacked in size, however, the Wallachian army made up for in reputation. Mihailovic, present in the Ottoman army during the campaign of 1461-62, says that 'we were greatly afraid, even though the Wallachian voivode had only a small army, and therefore we always advanced with great caution in fear of them, and every night surrounded ourselves with ditches.'

*The Cumans and Wallachians were very similar in arms and appearance, and significantly the terms 'Cuman' and 'Wallachian' are used interchangeably in 13th-14th century Hungarian sources.

Dracula, incidentally, appears to have been the first voivode to introduce artillery into Wallachian field-armies; its effectiveness is testified by Mihailovic, who tells us that the army opposing Mehmed II's crossing of the Danube in 1462 'killed 250 Janissaries with cannon-fire'. Other sources tell us that Dracula's total armed forces comprised a potential 10,000 cavalry and 30,000 infantry.

Chief military officers after the voivode were the *ban* of Oltenia on the Danube, responsible for frontier defence against the Turks, and the *Spatar* (from the Byzantine *spatharios*), effectively the Marshal, who in the earlier part of this period was responsible for the army's horses but later became the voivode's commander-in-chief.

Wallachian contingents in Ottoman armies

Like all tributary and vassal states, Wallachia was nominally obliged to supply troops to the Ottoman army — Doukas even records that Mircea the Old was killed whilst campaigning under Murad II in 1418. Vlad Dracul too led Wallachian troops in Murad's service, as in 1435 when, Doukas relates, he 'always had to lead the way, because Sultan Murad was afraid that he might attempt to ambush him'! The size of these Wallachian contingents (*Eflak*, as the Ottomans usually refer to them) appears to have been considerable: 12,000 are recorded to have been present in the army that marched against Uzun Hasan in 1473, 10-12,000 in that which fought against Stephen the Great of Moldavia in 1476, and according to two Ottoman sources 20,000 in the army that marched against him in 1484.

At the same time Ottomans could be found in Wallachian armies, the sultan often providing auxiliaries to support the Danesti faction (descendants of Mircea the Old's brother, Dan I, 1383-86) or other rivals for the throne. Dan II, for example, used Ottoman troops against Radu II throughout the 1420s, while Dracula's brother Radu III was supported against him by Mehmed II in 1462.

MOLDAVIA

The principality of Moldavia was originally established in 1352 or 1353 by King Louis the Great of Hungary as a Transylvanian march against Tartar inroads, its first voivode being Bogdan Dragosh (after whom it was at first called Bogdania, the Ottomans continuing to call the country 'Boğdan' ever after). Dragosh threw off Hungarian hegemony as early as 1359 (others say 1365), though after 1397 the country instead became nominally a Polish-Lithuanian vassal. Serious Turkish inroads commenced in the mid-15th century, and tribute was first paid to the Ottomans in 1455, but Stephen the Great (Stefan cel Mare, 1457-1504) successfully repudiated their overlordship and, despite a major defeat in 1476, Moldavia thereafter remained independent until after his death. Polish suzerainty was effectively ended in about 1480, from which time Stephen openly aligned himself with Moscow against the king of Poland. An attempt by King Jan Olbracht (1492-1501) to reimpose Polish claims in 1497 resulted in the defeat of his Polish-Lithuanian troops, supported by Teutonic Knights, by an alliance of Moldavians, Hungarians and Crim Tartars plus 2,000 Ottoman auxiliaries.

Moldavia's armed forces differed little in composition from Wallachia's, comprising 'lesser' and 'greater' armies in exactly the same way, though with the distinct difference that unlike the Wallachians, or come to that the Transylvanians, virtually the entire army was mounted on campaign, which gave it considerable mobility, though the majority of the peasants were only mounted infantry and actually dismounted on the battlefield and fought on foot. The 'Chronicle of Oláh' tells us also that: 'The Moldavians hold themselves to be nobler and braver than the Wallachians, and their horses are better. They can put an army of 40,000 in the field'. Stephen the Great's physician, Muriano, put this figure somewhat higher in 1502, stating that Moldavia 'can assemble an army of 60,000 men in times of need'. Other accounts mention 45-75,000. Most sources seem to agree that the cavalry element (heavy cavalry of boyars, curteni and viteji, light cavalry of landowning peasants) numbered only about 12-15,000 men, the balance being infantry supplied chiefly by the general levy upon which, it can therefore be seen, considerable reliance was placed.

The obligation of all able-bodied freemen to perform military service when called upon by the voivode is only first to be found mentioned in Moldavian records in 1444, but doubtless it existed in the 14th century and probably even earlier. Little is known of its utilisation in the 14th century, except that when fighting against King Sigismund of Hungary in 1395, Stephen I 'marched with all his people's force', comprising 'a light-armed host and a great multitude of archers'. The Polish chronicler Jan Dlugosz (d. 1480) confirms Stephen the Great's frequent use of the general levy, stating that 'only women and children remained at home', and that 'if he found a peasant without arrows, a bow and a sword, he ruthlessly condemned him to be beheaded.' Nicolae Costin referred to Moldavian peasant-soldiers in 1467 with 'scythes, spears and

axes', and Baltazar de Piscia described the army he saw in 1476 as comprised largely of *rustici* armed with bows, swords and spears. They were led by their district *starostas* (marshals).

The standing troops of the lesser army seem to have been first established by Petru I Musat (1375-91), and comprised the voivode's curteni — his standing troops, including castle garrisons and frontier guards (the *strajeri*), some (but very few) mercenaries, and his personal retinue — plus the contingents of the boyars. Under Stephen the Great at least, and probably since the 14th century, the cavalry element of the standing troops was provided by viteji, while the infantry were comprised of *voinici* (see page 6) and *iunaci* ('the brave'). Eye-witness descriptions of the army fielded in 1476 put the strength of these household troops at 10,000, but doubtless this does not include all of the frontier troops or castle garrisons, which appear to have been big enough to increase its numbers to 15,000. The figure of 10,000 also occurs in the first half of the 15th century (as, for instance, in 1430, when Sigismund of Hungary called for the voivode of Moldavia to provide that many men for service against the Ottomans), and the gradual increase in size of the standing army is reckoned to have been one of Stephen's achievements.

In addition the curte could field a small amount of artillery, probably introduced in the early-15th century. Stephen's army at the Battle of Vaslui in 1475 included 20 guns, and the next year he had an unknown number of cannons at Valea Alba. Most of Moldavia's guns and gunpowder, together with some other armaments (notably swords), were imported from Brasov in Transylvania and Lwów in Poland.

TRANSYLVANIA

Third of the Roumanian principalities, Transylvania was an Hungarian vassal throughout this period, and as a result of the exodus to found Wallachia under Radu Negru late in the 13th century it had the smallest Roumanian population of the three. Its voivode Stephen Laszkovic led allegedly, albeit improbably, 16,000 men at Nicopolis in 1396, but other than that it was only towards the middle of the 15th century, following the commencement of Ottoman raids in 1420, that Transylvania briefly entered the military limelight under its most famous voivode, the celebrated Janos Hunyadi (1440-56).

Traditional military service appears to have been identical to that found in Moldavia and Wallachia, with a lesser army of vassals and mercenaries, backed up by a general levy of able-bodied men when necessary. In Hunyadi's time the mercenary elements were Poles, Germans (including Hungarian 'Saxons'), Bosnians, Italians and Bohemians; the latter even included Taborite Hussites during 1443, commanded by Jenick of Meckov, Uhersko, and Jan Capek of San, and Bohemians fought in addition at Varna, Kossovo and Belgrade. It is probably the lesser army that is intended by a reference to the 'entire' nobility of Transylvania fielding 3,000 men for Sigismund in 1430. In 1456 Hunyadi put 6,000 'veterans' into Belgrade under his son Ladislaus, again probably the lesser army but this time backed up by a larger proportion of mercenaries.

Hunyadi made considerable use of the general levy: in 1442 he raised 15,000 'peasants, townsmen and Szeklers' to confront and defeat an invading Ottoman army, and in 1456 he raised 10,000 from his own estates round Hunedoara and Banat for the relief of Belgrade. In addition Transylvanian peasant levies fought in Hunyadi's armies at both Varna and Kossovo, and he raised a total of 12,000 foot and 1,000 horse from amongst them for the relief of Belgrade. One further source of troops, referred to in 1443, 1444, 1448 and 1456, was provided by crusaders, many of whom were similarly peasants; according to the 'Historia Boemica' only a third were or became skilled at handling arms, while the rest fought with slings and scythes. Most were from Poland, Germany and Austria, and allegedly as many as 20,000 assisted in the defence of Belgrade in 1456.

See also the following section on Hungary.

HUNGARY

Following his accession to the throne, King Charles Robert d'Anjou (1308-42) created a new aristocracy to replace the so-called 'little kings' of the late Arpâd-dynasty era. They were required to provide feudal military service, and in addition each had to establish and maintain a personal company of armoured horsemen called a *banderium,* usually recruited mostly from the lesser nobility of their own estates and partly from foreign mercenaries. These *banderia* varied greatly in size (some vassals even having more than one) but could be of substantial dimensions, often comprising 500 men and sometimes over 1,000, but also sometimes numbering as few as 25 men. Strictly speaking the size of each banderium depended on the extent of the vassal's estates, and inevitably those of the king, queen, and high-ranking court and church officials were the biggest — the king's banderium was about 7,000-strong, for instance, and in the 15th century the despot

of Serbia's (on account of his lands within Hungary) numbered 8,000. They were organised on a decimal basis, with units of 10, 100, and 1,000 men, the last being called a *dandar*, and were maintained at the vassal's expense, though, since they came to be looked upon as private armies at a very early stage, the king often found it necessary to recompense them when he required their support, which could usually only be invoked in wartime.

The other principal means of raising an army in the earlier part of this period was by calling upon the *generalis exercitus*, a sort of arrière-ban involving the obligatory service (theoretically as cavalry) of the entire lesser nobility, which in Hungary was considerable (numbering between 20-40,000 families by the 15th century). However, by a law of 1222 these could only be called upon to serve within the boundaries of Hungary and only for 15 days, not being obliged to serve beyond the frontier at all. The constrictions this imposed upon a military expedition are well-evinced by an episode of 1439, where the lesser nobility abandoned King Albrecht I's army during a campaign against the Ottomans because their 15 days were up, obliging Albrecht, left with insufficient troops, to abandon his undertaking. In addition the generalis exercitus lacked organisation and leadership, and by the early-15th century at the very latest the lesser nobility of which it was comprised had largely deteriorated into an ill-armed, upper-class peasantry serving chiefly on foot (horses, where owned, being used only for transport).

The largest armies raised during the 14th century were seemingly those which marched to Zara in 1345 (80,000 Hungarians, Bosnians, Austrians, Croats, Bohemians and Styrians), and fought against Sultan Bayezid I at Nicopolis in 1396. The latter army is variously stated by contemporaries to have numbered from 16,000 (Schiltberger) and 60,000 (Froissart) to 150,000 men (Philippe de Mézières), A. S. Atiya and other modern authorities tending to favour figures of 80-100,000; Froissart in fact has it that Bayezid estimated the strength of the whole Christian army at 100,000, a figure repeated by Boucicault's biographer. Atiya ('relying almost entirely on the chroniclers', as he puts it) agrees that the entire army, including crusaders, totalled 100,000 men, of which the 'Hungarian' elements comprised 60,000 Hungarians, 10,000 Wallachians and 13,000 Styrian, Bohemian, Polish and Italian mercenaries and crusaders mixed. Another authority calculated that the Hungarian army was made up of 36,000 Hungarians, 26,000 Hungarian mercenaries, 16,000 Transylvanian infantry, 10,000 Wallachians and 12,000 German and Bohemian mercenaries — i.e., 100,000 men in all. The individual figures cited for the non-mercenary elements in this list are certainly not beyond the realms of possibility; the proposed quantity of mercenaries, however, does stretch credibility a little too far.

The Militia Portalis

Following the army's poor showing at the Battle of Nicopolis, a *Diet* (assembly) of 1397 ordained that in future those of the so-called lesser nobility who were unfit for service were to be exempted. Instead each baron and noble was to provide and equip an archer, probably mounted, from each 20 *jobagiones* or 'serf-lots' that he owned. However, this attempt at reform proved unsuccessful, and new attempts at reorganisation were instigated by Sigismund (1387-1437) in 1432-35. The better-off members of the lesser nobility were still required to serve in person, but the poorer of them were exempted. In the event of a general campaign those with lands (lay and ecclesiastic landowners alike) were now required to field 3 mounted men per 100 serf-lots, i.e. one man per 33 (amended to one man per 10 in Transylvania in 1435), armed with at least a bow by the decree of 1432 or with bow, quiver, sword and lance by that of 1435; these constituted the *militia portalis* (the serf-lots probably being the same as *portae*, which were units of tax-assessment). Those with less than 33 serf-lots were grouped together to jointly supply the appropriate contribution of men, each county being expected to provide a specific quantity under its *comes*. The 15-day time limit was abolished and service could now be called upon for as long as required. The principal restriction on its use was that the militia portalis could only be mustered in wartime. Sigismund anticipated being able to raise some 12,000 men by this means. In 1454 a new decree actually called for 4 mounted archers and 2 infantrymen per 100 portae, the text of the decree admitting to the 'extraordinary' nature of this doubled demand, promising to revert to 'ancient custom' thereafter. By this time serfs owing fealty to a lord or prelate were allowed to be incorporated into their banderia on campaign.

The service of one man per 20 jobagiones reappeared briefly in 1432 while an army was being raised against the Hussites, and this proportion of service was again called for in 1459, the militia in addition being expected to serve outside of the kingdom when led by the king in person, though its obligatory duration of service was now reduced to 3 months. This service was required of Wallachians, Ruthenians and Slavs in addition to Hungarians, but not of the much-privileged Saxons or the Szeklers, Cumans, Jazyges and Tartars, who performed military service under their own leaders as they always had. (Szekler service as set out in 1473, when it was in decline, was divided into those who served with 3 other mounted men; those

who served alone on horseback; and those who served as lightly-armed infantry. The Szeklers and Saxons together provided 4,000 men in 1430.*) A decree of 1463 increased the militia obligations so that nobles with 10 serfs or less had to serve in person, and for every additional 10 serfs had to field a mounted archer. However, this increased requirement was shortlived, probably lasting only a few years at most before reverting to the 1:33 ratio originally introduced by Sigismund. Yet another decree, this time dating to 1492, revised the obligation to 1:20 again (armed with bow, shield, lance, and if possible a mail corselet), amended in 1498 to 1:36, or 1:24 in the southern border counties which fielded hussars while the rest fielded heavy cavalry. It has actually been suggested that the word 'hussar' itself was derived in the mid-15th century from the frequent practice of calling upon one man in each 20 (*husz*) to serve in the militia portalis.

Matthias Corvinus and the Black Army

The most celebrated Hungarian soldier of the 15th century was Janos Hunyadi, voivode of Transylvania 1440-56, appointed Hungary's *Capitaneus Generalis* in 1453, who achieved a series of notable victories over the Ottoman Turks in Transylvania in 1442 with a largely mercenary army comprised principally of Bohemians. This he maintained at his own expense until his election as Regent in 1446, upon which he introduced a tax (a florin on every porta) designed to finance the maintenance of such a permanent army, since the banderia, although they still existed, were regarded as too ineffective and unreliable to constitute the nucleus of a standing army. This policy was continued under Hunyadi's son Matthias Corvinus (king of Hungary 1458-90), under whom the mercenary army steadily increased in size. Modern authorities generally refer to his army as the 'Black Army' (*Acies Negri* or *Exercitus Nigrorum*), though this term was actually only first used to describe the forces of his successor Vladislav II (Laszlo VI), which were admittedly based on a core of mercenaries originally employed by Matthias. The chronicler Bonfini was the first to use the name, attributing it to the 'toughness of its soldiers', modern writers mistakenly claiming instead that it arose from the fact that the soldiers wore black armour or black uniforms, for which there is no evidence at all. It was comprised of light and heavy cavalry, infantry and artillery, with cavalry usually predominant. Though many of the Hungarian lesser nobility provided its officers, most of these mercenaries were certainly foreigners, a fact that can probably best be explained by the answer given to Bertrandon de la Brocquière when he himself remarked on it after seeing 25 Germans arrive to join the garrison of Belgrade in 1433: on asking why Serbs or Hungarians were not employed instead, the Germans told him that 'the Serbians were subjects and tributaries of the Turk, so they could not be trusted; and as for the Hungarians, they were so much afraid of him [the sultan] that if he should appear they would not dare to defend it [Belgrade], however great its strength. They were therefore obliged to call in foreigners'.

As early as 1463 a Venetian letter reported that Matthias' standing army numbered 2,000 cavalry and 5,000 infantry; that these included the royal banderium is likely, as too is the fact that it probably included many Bohemians, Germans and Silesians since these had likewise constituted the mainstay of Hunyadi's own mercenary troops (German and Bohemian handgunners featuring prominently in Hunyadi's forces at the Battle of Kossovo in 1448, for example). Bonfini, writing after Matthias' death, speaks of Bohemians, Hungarians and Serbian light cavalry as comprising the king's 'three armies' in 1477 and 1482; doubtless the Bohemians predominated since Bonfini actually states that Matthias' 'Black Army' was comprised of Bohemians. Certainly many of his leading generals were Bohemians, but many others were Germans, Serbs† and Silesians, all of which provided substantial elements of the army, as can be seen from the following table giving details of Matthias' army as it stood in 1475/9, taken from the report of another Venetian, Sebastiano Baduario:

Bohemians, Moravians, Silesians	6,000 heavy cavalry
	10,000 infantry
Hungarians	10,000 heavy cavalry
	4,000 infantry

*Many different theories have been put forward regarding the origins of the Székely or Szeklers. Some say they were descended from a Bulgar tribe, others that they were descended from the Avars or even the Huns. However, one more recent explanation relates them to the Blachi (often confused with the Vlachoi, or Wallachians), a Qarluq tribe whose name means 'white-piebald' or 'white-legged', a description of their horses. Interestingly, the later Székely border regiment and the 19th century Székely cavalry rode white-legged horses 'in conformity with a tradition dating back several centuries', and the word Szekler could itself derive from *säkil*, meaning a white-legged horse. Szeklers still provided military service in exchange for their lands up to the late-15th century, their leaders — chief of whom was the Count Székely — being accepted as equal in status to feudal lords.

†Serbs settled in Hungary in large numbers from 1400 on. Their military obligations, always set higher than those of native Hungarians, were invariably assessed in hussars rather than heavy cavalry.

Szeklers with lance, shield and bow	16,000 cavalry
Transylvanian banderia	(?8-10,000) cavalry
	2,000 handgunners
	2,000 Wallachian infantry
Vuk Brankovic, despot of Serbia in exile	5,000 hussars
Auxiliary forces	
Voivode of Moldavia	12,000 cavalry
	20,000 infantry
Voivode of Wallachia	8,000 cavalry
	30,000 infantry

Of these, the first two elements are undoubtedly the 'Black Army' and the banderia respectively. Despite the fact that even on their own they total 30,000 men, most chronicles imply that Hungarian armies of this date were relatively small, on the whole numbering only between 10-20,000 men; for instance Vlad Dracul, voivode of Wallachia, observed of the 20,000-strong Hungarian army en route to Varna in 1444 that it was smaller even than the retinue that customarily accompanied the Ottoman sultan on hunting trips! It is clear from Baduario's list, however, that the total number of troops available was over 125,000. In addition Marino Sanudo reckoned that 120,000 Hungarian troops were available in an emergency, probably referring to the potential manpower available from a general levy of the banderia, lesser nobility and better-equipped serfs.

In 1485 — by which date Matthias had established a shortlived empire by his conquest and occupation of Lower Austria, Styria, Carinthia, Moravia, Silesia and Lusatia — the 'Black Army' itself totalled as many as 20,000 cavalry, 8,000 infantry, 5,000 wagons, and artillery, but it had reached the zenith of its fortunes. Its maintenance was proving a severe drain on the resources of the crown, which would have been utterly crippled if Matthias' plan to employ perhaps 10,000 Swiss (he had first employed a Swiss contingent in 1482) had not been annulled by his death. His successor King Vladislav II of Bohemia was not able to maintain it thereafter, not least because he was obliged to abolish the tax that had supported it in exchange for the Hungarian nobility's support of his claim to the throne. The army itself, under its German commander Johann Haugwitz, was sent against the Turks without provisions or pay, and in the political turmoil which followed Matthias' death began to depend on looting for its sustenance, until, after his accession, Vladislav sent the celebrated Pál Kinizsi against it with a banderial army. Reeling back from Kinizsi, the 'Black Army' clashed with the invading forces of Sigismund of Austria and was subsequently dispersed (1493), though some elements were nevertheless retained thereafter in Vladislav's service.

Following the demise of the 'Black Army' the nobility forced the Diet to exert pressure on Vladislav so that their personal banderia thenceforward received regular pay in much the same way as the mercenary army had. Indeed, the tax that had previously maintained the 'Black Army' was collected again in 1491 and then from 1493 on for this very purpose, the nobility usually collecting and retaining it for themselves. In 1498 the banderial armies were recorded as follows:

Royal banderium	1,000 cavalry
Despot of Serbia's banderium	1,000 hussars
Banderia of prelates and the Church	6,750 cavalry
Banderia of *bani* and voivodes of vassal territories, paid by the king	1,600 cavalry
Banderia of 40 barons and 2 Croatian counts	(?6,700-12,500) cavalry

By this time the militia portalis may have itself been comprised of mercenaries, employed on the basis of one per 20, 24 or 36 portae, and had anyway become hard to distinguish from banderial troops.

Artillery

Though the first reference to the use of gunpowder artillery in Hungary goes back to the relatively early date of 1354, it was chiefly reserved for the defence of fortresses until the mid-15th century, possibly because Hungarian thinking in this field was influenced at an early stage by the Ottoman preference for big, unmanoeuvrable guns as described on page 00. Brocquière actually gives a description of brass cannons that he saw in Belgrade in 1433 that could equally well have applied to Ottoman guns: 'two of them were formed of two pieces, and one of such a size I never before saw the like. Its mouth was 42 inches in diameter'. The bore of this gun was therefore greater even than that of Urban's monster used at the siege of Constantinople, while most authorities agree that Urban himself was an Hungarian. Hunyadi and Matthias seem to have been responsible for the introduction of field-artillery, doubtless under the influence of their Bohemian

mercenaries since it appears to have generally been used in conjunction with the tactical deployment of wagons on the battlefield. Baduario records in his report of 1475/9 that in addition to having equipped the barges of the Danube fleet with guns, Matthias' field army had as many as 30 bombards firing 100-200 lb shot, 30 culverines firing 50-100 lb shot and 12 gun-carriages each mounted with 6 guns firing 50 lb shot. Nevertheless, Matthias apparently favoured trebuchets for siege-work. Most of his gunners were Hungarian artisans from the towns.

The river fleet

In the 15th century a small flotilla (*naszad*) of river-boats was maintained on the Danube and the Sava with its principal bases at Belgrade and Sabac. Crewed principally by Serbs and other South Slavs, it performed sterling work during the Ottoman siege of Belgrade in 1456. As already mentioned, Matthias Corvinus subsequently equipped it with artillery.

THE HOLY ROMAN EMPIRE

For much of this period the Holy Roman Empire underwent severe political unrest resulting from the elective nature of the German monarchy, the principal intention of its seven Electors (see page 000) being to secure their own autonomy by preventing the establishment of a strong, hereditary dynasty on the throne. In the long run, however, they were entirely unsuccessful in this ambition, since the inevitable result of their policy was the establishment of not one but *three* powerful ruling families, the Wittelsbachs, Luxembourgs and Habsburgs, who between them ruled the Empire throughout the 14th and 15th centuries, the Habsburgs ultimately establishing a dynasty that was to rule the Holy Roman Empire uninterrupted from 1452 right up until 1806, and the Austrian Empire thereafter until is disintegration in 1918. At one time or another during the period covered by this book the Holy Roman Empire included — in addition to the conglomeration of virtually independent duchies and counties that made up Germany itself — Austria, Styria, Carniola, Carinthia and the Tyrol (these being the nucleus of Habsburg territory), plus Luxembourg, Bohemia, Moravia, Lusatia, Brandenburg and Silesia* (which were the core of the Luxembourg lands) and even Hungary and North Italy. The less important Wittelsbachs' lands principally comprised Bavaria, the Rhine Palatinate, Holland and Friesland.

The principal result of his vassals' virtual independence was that the Emperor was dependent on the goodwill of the Imperial Diet (parliament) for military support, both for the defence of the Empire and for the so-called *Romzug* ('Rome expedition'), when he would travel to Rome for his coronation as Emperor. The Romzug, the furnishing of an army of about 12,000 men for 6 months' service by approval of the Diet, remained the basis on which Imperial armies were mustered throughout this period and even into the 17th century, and even when the provision of troops (*Volkshilfe*) was gradually replaced by the provision of money (*Geldhilfe*) in order that mercenaries might be hired direct, the sums allotted were still described as *Römermonaten* or 'Rome money'. Either way, professional soldiers were favoured over the feudal *Landesaufgebote* from the 13th century onwards, since in addition to obliging the nobility to provide troops in times of danger the latter also called for the conscription of every thirtieth, tenth or even fifth able-bodied freeman — a likelihood which made the German nobility, with an innate dread of peasant insurrection, understandably nervous. In addition, if the Diet approved the summoning of troops from the nobility and the cities these almost invariably arrived late, if at all, and since the 6-months' military service approved by the Diet commenced with recruitment rather than muster, the effective campaigning time available was often curtailed by several weeks as a result. Furthermore, these contingents were often sent on campaign unpaid, which did little for their morale.

As some indication of the problems inherent in the Volkshilfe system, when Sigismund asked the Diet to approve his request for an army of 6,000 *Gleven* (i.e. lances, in 15th century Germany usually comprised of a man-at-arms, page and archer/crossbowman, all mounted, sometimes including in addition several attendants serving as foot-soldiers†), for a campaign against the Hussites, he was told that it was impossible to raise an army that size in Germany or to supply it once it was in Bohemia; they would, however, authorise the raising of 3-4,000 Gleven if the cities would raise another 1,000 of their own, but the cities insisted that such a requirement was beyond their financial capabilities. Nevertheless, in 1430 the Diet actually authorised

*Polish Silesia was in fact a Luxembourg vassal from the 13th century on, becoming part of Bohemia in 1368, and Silesians are frequently to be found in Bohemian-Imperial armies or contingents throughout this period, even fighting against the Poles (as in 1331, and at Tannenberg in 1410). They probably appeared in their greatest numbers under Emperor Sigismund.

†In fact there could be 2 servants and up to 3 archers or crossbowmen in a Gleve, of whom the mounted archer(s) dismounted to fight. For the lance unit elsewhere in Europe see volume 1, pages 6, 22, 29, 35 and 41; and below, pages 67 and 69.

the raising of as many as *8,200* Gleven, though fairly certainly with tongues firmly in cheeks since they even expected Burgundy, Savoy and the Ordensstaat of the Teutonic Knights to provide contingents. The resultant army, considerably smaller than that authorised, was routed at Domazlice in 1431. Gleven were organised on a decimal basis, each 10 being commanded by a Captain and each 100 by an *Oberhauptmann.* In addition there could be found *Einspännige,* mounted men without any following, who were usually attached to Gleven for tactical purposes. The latter are comparable to Italian 'broken lances'.

By contrast, the hiring of mercenaries (including many of the Emperor's feudal vassals) usually ensured prompt attendance and professional quality. Their payment was usually covered by Römermonaten or additional taxes which had to be approved by the Diet, invariably only after prolonged wrangling between Diet and Emperor. Between raising such troops and actually being given the money with which to pay them months, or even years, could elapse, during which time the Emperor had to borrow the necessary money at fantastically high interest rates (20-30%), which can have done little for the economy of the Imperial household. Even then, the sum authorised by the Diet tended to cover only the soldiers' wages, not the inevitable administrative costs, so that the actual strength of an army was often well below its Diet-approved theoretical strength. Other than Romzug-money, Geldhilfe sometimes took the form of authorisation being granted to the Emperor to collect a direct tax called the *Gemeiner Pfennig*, calling for payment of half or one per cent of the value of all property or income. Generally speaking, the Diet authorised Volkshilfen and Geldhilfen alike for the year following, but towards the end of this period they were sometimes authorised for several years at a time, as in 1495 when a Gemeiner Pfennig was granted for 4 years.

An inevitable result of these various restrictions being placed on the Imperial establishment was an increasing reliance by Emperors on the troops of their own hereditary territories — Luxembourg lands for most of the 14th and early-15th centuries (1308-13, 1346-1400 and 1410-37), and Habsburg lands thereafter — so that as the 15th century progressed the Imperial army became more and more an Austrian/Habsburg army, an ongoing process completed only in 1806 with the final abolition by Napoleon of the Holy Roman Empire and the creation of the nascent Austrian Empire. Admittedly, as dukes of Austria the Habsburgs had to contend with their own Diet at home just as they had to contend with the Imperial Diet in Nuremberg, but since they were usually being asked for troops in order to defend their own territory against outside aggression they generally tended to argue less and ensure that requisite troops and money were made available more quickly. Before long Austria's Diet authorised the maintenance of a small regularly-paid frontier force to guard against border incursions (the 'daily war', as it was called), numbering 1,000 cavalry in 1432. These troops, comprised both of mercenaries and militiamen from the frontier towns, were a key element in the defence of Austria against both the Hussites and the Hungarians, and later (from 1471 on) against the Ottomans too.

Town militias

Though their principal military responsibility was the defence of their own towns and the maintenance of their walls, in cases of particular danger town militiamen could be found serving outside of their home towns, though rarely further than a half-day's distance from them. However, by the late-13th century it had become fairly commonplace to find at least some mercenaries being hired to serve in place of militiamen, a trend which continued throughout this period. Nevertheless, it was a slow process; initially only the defence of the most exposed towers and the suburbs beyond the town walls was allocated to hired professionals, but in due course they took responsibility for the inner defences too and often even provided captains for the town militia. Du Boulay points out that one occasional complication resulting from the hiring of mercenary captains was that they might turn out to be related to those hired by the town's enemies, in which circumstances the campaign was 'rarely pursued to a conclusion', seemingly a rare enough occurrence anyway through lack of money, determination and military competence on the part of the inexperienced local knights who tended to be hired. More professional bodies of mercenary troops, with uniforms or badges to distinguish them, were also available, but these tended to function independently, in much the same rapacious capacity as the Free Companies that roamed France throughout the Hundred Years' War.

Organisation was usually based on the division of the town into *Vierteln* (quarters) based on its principal gates. Each quarter was commanded by a *Viertelmeister* appointed by the town council, who was assisted by other officers plus trumpeters and tower guards. The mayor himself usually doubled as commander of the militia, though towards the end of this period professional soldiers were often employed in this capacity instead, largely as a result of the growth in importance of artillery. The municipal authorities were often responsible for the militia's arms and equipment, which, coupled with the added expense of hiring mercenaries, resulted in many militia forces being proportionately small. The largest force fielded by Vienna,

for instance, numbered just 300 cavalry and 5,184 infantry (this was in 1458). Strassburg and Aachen, on the other hand, fielded about 20,000 men and 19,826 men in 1392 and 1387 respectively.

Many towns boasted their own firing ranges and drill squares, and some attempt was made at training even in peacetime. In addition, in the late-14th century some towns began to maintain their own artillery, which became the responsibility of a paid officer called a *Büchsenmeister* or *Geschützmeister* (who received an additional year's pay if he was successful in repulsing an enemy assault).

Artillery

Gunpowder artillery was apparently in use in Germany by the 1320s, a later source recording the use of *serpentine et canons* at the siege of Metz in 1324; indeed, many continental authorities even attribute the invention of gunpowder to a German monk of Metz or Fribourg named Berthold, dating the discovery to 1313 (based on erroneous dating of one ms.) or 1320. In early German sources the term *Büchsen* or *Püchsen* was generally used for firearms of all types, but later these terms came to refer only to handguns. Amongst the many types of early gun referred to by this term were *Pfeilbüchsen* (quarrel-guns, for which see page 160 and figure 145 in volume 1); *Karrenbüchsen* (light guns on *chars* or *charrettes* as described on page 157, volume 1, firing shot weighing about 3 lbs); *Wagenbüchsen* (wagon-guns, probably like that illustrated in figure 170); *Centnerbüchsen* (guns usually firing 100 lb shot); and *Tarasbüchsen* (tarasnices as depicted in figures 167 and 168, copied from the Hussites).

Much bigger than any of these were the massive bombards used in siege-work here as elsewhere in Europe, with the one difference that, judging from the size of their shot, the very largest of them appear to have been in the same class as the giant guns used by the Ottomans rather than those developed in France and the Low Countries. One fielded by the city of Frankfurt for the siege of the Count Palatine's castle of Tannenberg in 1399 required 20 horses to draw its barrel and another 34 to draw its stand, plus 14 wagons to transport 16 large shot, 12 smaller shot and the requisite gunpowder. It is on record that Tannenberg's walls were pierced at the second shot from this monster (appropriately named *Der Grosse Frankfurter Büchse*), which is unsurprising when one learns that shot discovered in the rubble of the castle weighs some 925 lbs.

By the late-15th century individual German princes and cities could field considerable quantities of artillery. Markgräf Albrecht Achille of Brandenburg, for instance, proposed in 1474 that his army of 30,000 men should be accompanied by 30 serpentines, 10 mortars and 70 ribaudequins, while the city of Innsbruck in 1486 had 8 large cannon, 2 large mortars of 24-inch calibre, 4 medium-sized mortars, 5 medium-sized cannon, 13 serpentines and 15 cortaux. The Duke of Lower Bavaria-Landshut had a similarly large yet diverse collection of guns in 1488-89, comprised of 4 large cannon, 3 mortars, 9 medium-sized cannon, 18 small bombards, 17 serpentines, 1 cortaud and 31 culverines.

THE HUSSITES

The Hussites were named after Jan Hus, a Bohemian reformer whose execution as a heretic at the Council of Constance in 1415 gave rise to an upsurge of nationalism in Bohemia. There were two principal Hussite factions, comprised of the moderate Orebites and the more extremist Taborites. The former, named after Mount Horeb (i.e. Mount Sinai), who were also referred to as Utraquists (see figure 128) or the Calixtine faction, represented the intellectual, urban element of the Hussite movement. Their most important leader was the celebrated half-blind Jan Zizka, who became one of the 4 captains of Tabor in 1420 before assuming leadership of the Orebites in 1423. It was after his death in 1424, on which Prokop the Short became their principal leader, that the Orebites began to call themselves the Orphans. The Taborites, named after Mount Tabor (as they called their place of assembly in southern Bohemia), appealed more to the populace. In addition to the armies fielded by these two factions a third force was provided by the mercenary-stiffened Prague levy, and others by pro-Hussite provinces. There was also a Polish-Lithuanian involvement, King Vladislav II's nephew Zygimantas Kaributas (Zygmunt Korybut) contriving to have himself elected regent of Bohemia in 1421 with Zizka's support.

The conflict of opinions that resulted from the fragmentary nature of the Hussite movement inevitably led to internal tension, such as existed between the Praguers and the Taborites almost from the outset. Friction was frequently apparent between the movement's various other factions too, particularly between Prague and the Orebites in 1424 (ending in the collapse of Old Praguer power for 10 years, following the Battle of Malesov that year). Korybut made some attempt to unite the Hussites, but where diplomacy failed even he resorted to force, resulting in clashes with both the Orebites and the Taborites. However, in 1427 he was subjected to close confinement when plans were discovered in which he had intended to restore Bohemia to the Catholic church in exchange for its crown, and he subsequently fled the country. Prokop the Bald

(or 'the Great'), the leader of the Taborites, was thereafter recognised as effective leader of the country. Only on a handful of occasions — as at Vysehrad in 1420, Aussig in 1426 and Glatz in 1428 — did as many as 3 of the Hussite movement's factions actually co-operate with each other.

Even thus fragmented, the Hussites could field considerable forces to confront the several Catholic crusades launched against them between 1420 and 1432. Zizka led some 9,000 men from Tabor in support of Prague as early as 1420*, and in 1421 a Praguer army under Wilhelm Kosta of Postupice numbered 7,000 men and 320 wagons. The same year Korybut allegedly led a force of 5,000 Poles and Lithuanians in support of a Moravian Hussite faction called 'The Temperate Ones' (*Qui Mediocres Vocantur*); perhaps half this force was of cavalry since a Silesian source of 1422 put his strength at 2,500 men-at-arms. In 1423 Zizka led 3,000 Orebites with 120 wagons at the Battle of Horice, and in 1424 he fielded 7,000 infantry, 500 cavalry and 300 wagons against the Praguers at Malesov. At the end of 1429 the introduction of the so-called *spanile jizdy* ('glorious' or 'beautiful rides', comparable to the English *chevauchées*) against Germany saw Prokop the Bald organise 5 armies totalling in all 40,000 infantry, 4,000 cavalry and 3,000 war-wagons, probably their largest muster of the entire period of the Hussite wars, though in 1431 he is again reputed to have led 40,000, or possibly 55,000, men and 3,000 wagons, this time allegedly including some 8,000 Poles and Lithuanians under Korybut (though a more credible source puts his contingent at only about 1,000 Polish knights and mercenaries).

The wagons referred to several times above were the key to the Hussites' military superiority over their German and Catholic Bohemian opponents, as will be explained in the section on tactics. The crews of such wagons are variously recorded in contemporary sources as 10 or 20 men. The 'Hodětin Ordinance' says 20, comprised of 2 well-armed drivers, 2 handgunners, 6 crossbowmen, 14 flailmen, 4 halberdiers and 2 pavisiers; the 'Nuremberg Entwurfen' of 1428 and 1430 list instead only 2 flailmen, 2 halberdiers and 2 or 4 crossbowmen. Interestingly an Austrian *Wehrordnung*, or army ordinance, of 1431, calling for military reorganisation designed to combat Bohemian incursions, specifies Hussite-style service wherein strong wagons pulled by 4 horses provide the nucleus of the army, each crewed by 20 men comprising a driver, 3 handgunners, 8 crossbowmen, 4 flailmen and 4 halberdiers; an amendment to this ordinance the following year mentions handgunners but no longer specifies a quantity, probably a tacit admission that it was impossible to equip as much as 15 per cent of the army with firearms! Amongst Bohemians and Austrians alike, each wagon had its own commander, wagons then being grouped into tens, and then into 'lines' of 50 and 100 wagons under *Zeilmeistern* (Line masters), overall command being the responsibility of the Captain of Wagons. In addition there was a Captain of Cavalry, a Captain of Infantry and a Captain of Artillery. The infantry at least were organised in units of 100 men, this being the usual strength of the *rota*, which is the unit mentioned in Zizka's ordinance of 1423. Hussite cavalry were normally outnumbered by their infantry on a ratio of about 1:10; they first appeared in 1420, when Zizka trained a body of crossbow-armed young townsmen to act in a scouting capacity, mounting them on captured German horses (the unharnessed wagon horses otherwise being utilised). As support for the movement grew, the retinues of pro-Hussite Bohemian noblemen (*szlachta*) came to predominate amongst the cavalry.

Other than their war-wagons, the Hussites' other principal tactical innovation was the large-scale introduction of firearms onto the battlefield. In addition to the various conventional types of gun that had been universally adopted throughout Europe and the Near East by the early-15th century, the Hussites made widespread use of two types of artillery of their own invention, the *tarasnice* and the *houfnice*. The latter, called a *Haufnitze* or *Haubitze* in German (giving rise to our 'howitzer'), only first appears in official sources during the 1440s, but other accounts say howitzers were used at the Battle of Aussig in 1426 and were the principal type of Hussite field-gun. It had an 8-12 inch calibre. The tarasnice is described under figures 167 and 168. Their larger guns, the ubiquitous bombards, only saw action during sieges. At the 6-month siege of Karlstein in 1422, where the Praguers under Korybut fielded 41 guns, there were 4 large bombards of which one, called *Rychlice* ('Rapid') could fire 30 shots a day compared to the 7 shots which were all that the others could manage. On this occasion at least, and doubtless on others too, the Hussite besiegers also used a large number of trebuchets, which appear to have done more damage than the guns.

Modern authorities reckon that a Hussite army of 6,000 men would have had about 36 field-guns, 10 larger guns and about 360 handguns, and that in the 'glorious rides' of 1429-30 (where the Taborites were accom-

*Sigismund's opposing army on this occasion numbered some 80,000 men according to his contemporary biographer Eberhart Wendecke, a Prague chronicler stating that in addition to Germans it included Serbians, Wallachians, Bulgarians, Poles, Ruthenians, Russians, Lowlanders, Swiss, Englishmen, Frenchmen, and Aragonese and other Spaniards.

panied by the better-equipped Prague militia and other troops) their 3,000 wagons may have included 300 field-guns, 60 larger guns, 5 bombards and as many as 3,000 handguns.

A renewed bout of anti-Hussite crusades took place in 1464-71, led by Zdenek of Sternberk and other Catholic Bohemian lords against King Georg Podiebrad of Bohemia, the so-called 'Hussite king'. The enemy this time principally comprised Hungarian and Silesian troops under Georg's son-in-law King Matthias Corvinus of Hungary. King Georg, needing more and more men to stand up to Matthias' largely professional army, took to hiring mercenaries and independent free companies, the latter usually called 'Brotherhoods' or 'Beggars' (*Bratrici*), comprised of Bohemians who had been employed as mercenaries in other countries (appropriately enough including Hungary). They were paid for by the revenues of the silver mines at Kutna Hora and elsewhere. In addition, in 1470 he issued an edict that each of Bohemia's 10 districts were to raise and maintain a permanent defence force, ranging in strength from 350 men to more than 1,000 and probably numbering about 6,000 men in all. Approximately a tenth were to be cavalry, the rest infantry with a war-wagon per 18-20 men, therefore totalling about 270-300 wagons in all. By these means Georg was able to field armies of between 5-10,000 men, of whom only 1,000 at the most were usually cavalry.

THE ORDENSSTAAT OF THE TEUTONIC KNIGHTS

After the fall of the city of Acre in 1291, the headquarters of the Teutonic Knights of the Hospital of St Mary of Jerusalem moved to Venice, but remained there only until 1309, at which date it was transferred to Marienburg in Prussia. The Order flourished during the course of the 14th century, purchasing Reval and northern Estonia from Denmark in 1346; seizing the Polish duchy of Dobrzyn in 1392 and the island of Gotland in 1398; and being ceded Samogitia by Lithuania in the same year, thus finally linking the Prussian and Livonian halves of the *Ordensstaat*. It reached the limits of its territorial expansion by acquiring Neumark in 1402. This apogee of its power was shortlived, however. Dobrzyn was returned to Poland by the Order in 1405, Gotland was returned to Denmark 2 years later, and in 1409 Samogitia received Polish-Lithuanian support in a revolt that was to culminate in the campaign and battle of Tannenberg in 1410. The Order's defeat there was disastrous, and payment to Poland of a war-indemnity that amounted to 10 times the average annual income of the King of England led to financial ruin. After several decades more, the German nobles and burghers of the Ordensstaat revolted in 1454 and offered to hand Prussia over to Casimir IV of Poland. 13 years of bitter war ensued, with the Order's 8,000 unpaid mercenaries ultimately selling the towns that they garrisoned — including Marienburg itself in 1457 — to the Poles and rebel German lords. By the Peace of Thorn of 1466 Casimir received a further considerable part of Prussia and the homage of the Order's *Hochmeister* (Grand Master).

Though the Order survived even this humiliation with remarkable resilience it was, nevertheless, the effective end of an era, especially since one of the conditions of the Peace was that thereafter no less than half of the Order's brethren were to be Poles. The Peace of Thorn effectively divided the Order too, for one of its results was that the *Landmeistern* (see below) of Livonia and Germany became far more independent. The Order's Livonian brethren played an active and notably successful role as allies of Lithuania against the Muscovites in a war of 1499-1503, under their celebrated Landmeister Walther von Plettenberg, who defeated the Russians on the Seritsa River in 1501 (where his 4,000 horse, 8,000 foot and artillery drove back 40,000 Muscovites), and then won a signal victory with only 5,000 men at Lake Smolina in 1502. The Order's final demise in Prussia came some 20 years later, when the last Hochmeister became a Lutheran. It survived somewhat longer in Livonia, until smashed in the mid-16th century by Ivan the Terrible, the last Livonian Landmeister ceding the Order's lands to Poland in 1562.

Organisation remained much the same as is set out in *Armies of Feudal Europe*. Principal officers of the Order were the Hochmeister, his deputy the *Grosskomtur* (Grand Commander), the *Ordensmarschall* (Marshal of the Order), *Spittler* (Hospitaller), *Trapier* (Draper, or Quartermaster) and *Tressler* (Treasurer). Of these the Grosskomtur acted as castellan of Marienburg, and the Treasurer inevitably also stayed with the main Convent. The others became local administrators-in-chief, the Hospitaller commanding Elbing, the Draper Christburg, and the Marshal Königsberg, where the Order's headquarters was to be established after the loss of Marienburg in 1457. In addition to these there were the provincial Landmeisters of Germany, Prussia*, Livonia and Italy, plus occasionally regional commanders called *Landkomturen*. The Livonian Landmeister was usually based at Wenden, and was assisted in turn by his own marshal, draper and treasurer. The basic unit of administration in Prussia and Livonia alike was the *Komturei* ('commandery'), comprising at least

*The Prussian Landmeister's office was abolished when the Order's headquarters was transferred to Marienburg at the beginning of this era.

a dozen brother knights plus usually about 100 or more other soldiers — serving brethren, mercenaries and militiamen — commanded by a *Komtur* (commander) or a castellan, or in the case of more isolated commanderies a *Vögt* (advocate), who was also responsible for tax collection and local government.

Teutonic Knight armies were generally comprised of 4 distinct elements, being brethren, vassals, mercenaries, and adventurers. The brethren were either brother knights (*Ritterbrudern*) or serving brethren (*Diendebrudern*), the latter being non-knightly men-at-arms. They were organised into lances as elsewhere in Europe, each lance comprising a man-at-arms, another armed horseman, and a mounted crossbowman or archer (who probably often fought mounted in the role of light cavalrymen), plus 4 horses, the man-at-arms mounting the fourth horse just before entering battle. Relatively small in numbers, many brethren served as officers and NCOs to bodies of mercenaries and militiamen. Most were Germans (from the north in Livonia, from the south in Prussia), but by the end of the 14th century they also included many Poles and even Prussians and Lithuanians. The Order's vassals provided cavalry in return for grants of land, and even infantry in the form of a militia levy (see below). The cavalry included many light horse, raised on the basis of one per 40 or 50 *Hufen* at the beginning of this period, increasing to one per 25-30 Hufen by the 1370s and one per 10-15 by the early-15th century (though in the frontier wilderness of Lithuania and Samogitia estates remained somewhat larger). Men-at-arms tended to serve in exchange for estates twice the size of those of light cavalrymen. In Estonia in 1350 it was stipulated that one 'well-armed' German (i.e. a man-at-arms) and 2 natives 'who have at least helm and shield' were to serve for each 100 Hufen. The Teutonic Knights tended to call such native light cavalry *Turkopolen*, i.e. Turcopoles. In addition to those fielded by their vassals others were provided by mercenaries, particularly Bohemians and Poles. Most of the Order's mercenaries, however, were Germans.

The element I have called adventurers are those often inappropriately called 'crusaders' in both contemporary and modern sources. Like the Order's mercenaries they were chiefly Germans, but also came to the Ordensstaat from much further afield and included Englishmen, Frenchmen, Lowlanders, Italians, Hungarians, Scots and Swiss. Although some came in fulfilment of a crusader's vow, most came for practical military experience or, more often, simply for loot. Froissart observed that Prussia was the place for a soldier to go to 'take his profit', and where 'all knights and esquires go to advance themselves', while the 15th century poet John Gower complained that knights went to Prussia and Tartary simply 'to win praise' or to secure a lady's affection. Celebrities from Western Europe who participated in such expeditions included King John of Bohemia, who during a campaign of 1328-29 contracted the opthalmia that was to lead to his blindness; Henry of Grosmont, Duke of Lancaster, who led his own company of horse and foot to Prussia in 1352; Jean de Grailly, the Captal de Buch, in 1357; Albert, Duke of Austria, who in 1377 came with allegedly as many as 2,000 men; Henry Bolingbroke, Earl of Derby, the future King Henry IV of England, in 1390 and 1392 with companies of supposedly 300 men (but more probably about 150-200); and Marshal Boucicault, who indulged in 3 separate expeditions to Prussia in the late-14th century. Even Chaucer's Knight was such an adventurer, for we are told that he had often raided in Lithuania. Sienkiewicz claims that as many as 22 nations were represented in the Order's army at Tannenberg, the Burgundian chronicler Enguerrand de Monstrelet specifically mentioning that a few knights from Normandy, Picardy and Hainault were present in addition to a seemingly considerable number of Hungarians. The presence of non-Germans on this occasion was exceptional, however, for they were rare in Prussia after 1400, and even rarer in Livonia, and disappeared entirely soon after Tannenberg. The very last body of such non-German crusaders on record appears to have been a company of Burgundians who participated in a campaign against Poland in 1413.

Many of the Order's infantry were similarly provided by the retinues of crusading lords, others being recruited by the use of the crusading vow as a means of atonement or contrition. Of the latter category, large numbers enlisted with the Order itself and, along with mercenaries, were organised into units commanded by brother knights. Other infantry were provided by town militias of German burghers, or else by levies of native Prussians, Kurs (Curonians), Letts (Lettigallians, Semgallians and Selonians), Livs, and Estonians. Such troops had begun to diminish in importance during the early-15th century, but could still even then be found in sizeable numbers — a Livonian raiding party defeated in Samogitia in 1434, for instance, comprised 800 Kur militiamen alongside just 40 brother knights.

By about 1380 there were some 700 brethren in Prussia alone, and by 1400 there were probably some 1,600 brethren altogether in Prussia and Livonia under whom, at its greatest extent, the Order was able to raise considerable armies from its assorted reserves of manpower. For their initial attack on Gotland in 1398 they were able to muster 4,000 men, and when the island had to be recaptured from the Danes in 1404 the Hochmeister despatched an army of as many as 15,000 men. The greatest army ever assembled by the Order was inevitably that fielded at Tannenberg in 1410, which has been variously claimed as 30-80,000 men, including many volunteers and mercenaries as well as some 7-800 Prussian brethren (Livonia not being

represented at this battle)*. Polish accounts refer to the Order's losses on this occasion as 18,000 dead and 14,000 captured, a census of the latter group taken the next day indicating that they were comprised principally of the army's Slav elements, including thousands of Poles from Silesia, Pomerania, Kujavia and elsewhere, plus Bohemians, Moravians and Lusatians. Of the Teutonic Knights themselves, Desmond Seward in *The Monks of War* says 205 were killed, and Eric Christiansen in *The Northern Crusades* says 400. Sienkiewicz, however, relying on Eastern European sources, wrote in *The Teutonic Knights* that of 700 'white-cloaks' present at the battle only 15 were taken alive (though he fails to specify whether any actually escaped). Certainly it seems likely that most of the brethren were killed, since it is unlikely that the battle-flags of every squadron would have been captured otherwise.

Some further details of the composition of this army are to be found in a book of 1448 by Jan Dlugosz (see notes to figure 103), from which it would seem the army was organised in 50 squadrons or 'standards', confirmed by other accounts which put the Order's left wing at 14 squadrons, its right wing at 20, and its reserve at 16 squadrons. From Dlugosz's notes it is apparent that about a third of them were made up of adventurers and the Order's feudal vassals, while of the balance each was comprised of the brethren of an individual commandery plus its hired mercenaries and local men-at-arms. Only one squadron appears to have been made up entirely of brethren (that of the Marshal), since even the Hochmeister's division included German mercenaries. Dlugosz provides us with the strengths of just 7 of the squadrons, of which 2 are of German adventurers (60 and 80 lances strong); the others include those of the Bishopric of Warmia (Ermland), numbering 100 lances, and the Burgomeisters of Danzig (100 lances, including mercenaries and seamen) and Thorn (80 lances, including the town's own regular troops plus some foreign mercenaries). The strengths of only 2 of the Order's own squadrons are recorded, being those of the komtur of Mewe (80 lances) and the vice-komtur of Danzig (70 lances). Overall these figures therefore give an average strength of 80 lances per squadron, which would make the entire army some 4,000 lances strong; since we have already seen that in Prussia a lance comprised 3 mounted men, this must have put their cavalry strength at about 12,000 men (assuming that the archers/crossbowmen remained mounted), while it is known that their lances also included an unknown number of foot-soldiers (it probably being these who Dlugosz intends by his references in many places to 'the men of the town', i.e. militiamen; and in what other military role could Danzig seamen possibly serve on the battlefield if not as infantry?). Dlugosz also provides us with the strengths of 4 Livonian squadrons that fought at Nakel in 1431, two of which were of 100 lances, the others being considerably bigger at 200 and 300 lances. A later battle, at Swiecin near Lake Zarnowiec in 1462, provides us with rare details of the actual composition of the Order's armies in terms of troop types, telling us that on this occasion the army was comprised of 1,000 heavy cavalry, 600 light cavalry, 1,300 militia and 400 other infantry.

Artillery

The earliest reference to the use of artillery by the Teutonic Knights would appear to date to 1341, when Grand Duke Gediminas of Lithuania was killed by a cannonball fired from one of 2 fortresses built by the Order to blockade Vilnius. Cannon first accompanied a field-army during the *winter-reysa* of 1381, and before long individual commanderies had them (for example, Marienwerder by 1384). Reval in Livonia had as many as 32 cannon delivered c.1430, while 3 small Livonian commanderies visited by a traveller in 1442 are each said to have contained 6-8 guns. A field force of as few as 80 brethren and 300 other horsemen sent to assist Zygimantas Kenstutis of Lithuania's rival Svidrigiello in 1432 was accompanied by 'firearms', presumably artillery. The transport of their artillery was frequently by river, or along the coast of Livonia aboard Hanseatic ships.

The guns fielded by the Order at the Battle of Tannenberg were drawn from Marienburg. None of the sources give any idea of their number, other than to remark that there were 'many', but all seem to agree that they were ineffective, firing no more than one or two salvos (apparently because a shower had dampened their powder, so that it kept failing to ignite). Since their cannon were drawn up in front of the Order's battle array, the crews were apparently massacred in the first Lithuanian charge, and Sienkiewicz wrote that the Lithuanians captured the guns and hauled them away after the battle.

POLAND

A complete re-structuring of the Polish army was instigated by the last Piast king of Poland, Casimir the Great (1333-70), and the organisation thus arrived at persisted under his successors Louis I the Great, the

*In addition to these forces, a garrison of 300 men remained in Marienburg while the future Hochmeister Heinrich von Plauen, komtur of Schwetz, was left with a reserve of a further 2-3,000 men.

Angevin king of Hungary (1342-82), and the Lithuanian Grand Duke Jogailo, or Jagiello, who became King Vladislav II of Poland (1386-1434). Poland and Hungary were again briefly united under Vladislav III, King of Poland 1434-44 and of Hungary (as Laszlo IV) 1440-44, who was killed at the Battle of Varna.

The basis of military service was the *pospolite ruszenie*, by which the service of all freemen was obligatory by law. Its nucleus, as in the West, comprised the country's knighthood, which, though bearing a superficial resemblance to that of Western Europe, differed in being organised on a clan basis rather than a feudal structure. All its members were nominally equal, superior social status being conferred only on those of royal blood, or those whose personality or martial prowess set them above their fellows. The smallest military unit was the lance (*kopia*), comprised of a knight or man-at-arms and 2-5 mounted men plus some foot-soldiers. The mounted retainers were called *strzelcy*, best translated as 'shot-men' — i.e. archers, crossbowmen and, later, handgunners. They were recruited from among the hamlet and village elders (*wojt* and *soltys* respectively), who were obliged in turn to bring along 2-3 other men of their own, these providing the infantry element of the lance. Other elders themselves fought as infantry, commanding units of 10 men, thereby earning their title of *dziesietnik* or 'decurion'. The exact number of men in a lance depended on the knight's wealth, since he was expected to supply his lance with food for 6 weeks when fighting within the boundaries of the kingdom. Outside of the kingdom, however, he was paid by the crown, receiving in addition compensation for loss of men, horses and equipment in the king's service, and having his ransom paid by the crown if he was captured. Eventually this practice effectively crippled the Polish royal treasury following Vladislav III's campaigns of 1440-42 in Hungary, the crown thereafter becoming dependent on the whims of the nobility. Jan Dlugosz wrote that 'King Vladislav, during his campaign in Hungary, mortgaged nearly all the towns, castles, lands and villages, as well as the royal customs duties and other revenues.'

A varying number of lances went to make up a larger unit usually called a 'banner' or a 'standard', often referred to as a *rota*. Each of these was formed either from members of the same family or a related group of families, or from the men-at-arms of a specific province or district. Its strength therefore varied somewhat, between 50 and 120 lances, numbering from 150-600 or even 900 horsemen. There were 50 such banners at the Battle of Tannenberg in 1410. Each was commanded by a knight referred to in the Latin sources as a *capitaneus* (captain) or *ductore* (conductor, cf. Burgundian *conducteur*), but more popularly known as a *rotmistr* (rota-master) or *hetman* (a Czech word possibly derived from the German *Hauptmann*). Provincial banners were commanded by a *starosta* or marshal, often a duke or prince of royal blood. All commanders of banners were appointed by the king, though within the banner the rotmistr selected his own officers.

Infantry were similarly organised in rotas formed on a provincial basis, generally about 150-strong and usually commanded by a knight complete with his lance. The best-equipped infantry were of the town and guild militias, who provided the majority of the crossbowmen and pavisiers. However, infantry were not favoured on the battlefield and firepower was normally supplied instead by the strzelcy or by mercenary or auxiliary light cavalry, provided by Cumans, Wallachians (*Wolochy*), Hungarians and Lithuanians. After the union with Lithuania in the late-14th century (see below) Tartars also appeared; indeed, with the exception of the Cumans all of the above elements were present at Tannenberg, where Bessarabians and Serbs are also recorded. (Bessarabia was on the eastern frontier of Moldavia, and it is doubtless Moldavians that are intended since there were 400 Moldavian cavalry present at the siege of Marienburg only a few years later in 1422.) Such mercenary or auxiliary troops were maintained only in wartime, serving under their own officers under the overall command of a Polish knight holding the title of Marshal of Mercenaries. Some 2-3,000 mercenaries were hired for the Tannenberg campaign.

Overall command of the army was in the hands of the king, assisted by a sort of military council of some 8-12 knights. After these came the Grand Marshal (and, after the union, the Grand Marshal of Lithuania), then the starostas or marshals referred to above, the provincial voivodes, and the castellans.

In 1386 Poland was amalgamated with Lithuania by the marriage of Queen Jadwiga (1384-99) to Grand Duke Jogailo. This did not result in the overnight creation of a world super-power, as the sheer size of their combined territories might suggest, since the new king of Poland and his successors in Lithuania, Skirgailo (1387-96) and Vytautus (or Witold, 1392-1430), continued to pursue their own distinct and occasionally antagonistic policies for the next 50 years, until the death of Vytautus in 1430, just before he could be crowned king of Lithuania, and of Jogailo in 1434.

Artillery

Poland had gunpowder artillery by the second half of the 14th century, introduced from Germany and often served by Germans. However, they do not appear to have much used it in battle, tending to relegate it to

the defence or siege of fortresses. Certainly the Poles fielded some artillery at Tannenberg; the Teutonic Knights' guns that were captured in this battle were used at the subsequent siege of Marienburg and thereafter were assigned to the defence of various Polish castles.

LITHUANIA

The Lithuanian grand principality was first established in the 13th century by Mindaugas, one of 20 *kunigas* (kings) recorded in 1219, who had risen to predominance amongst the Lithuanian tribes by 1230, annexed Black Ruthenia in 1240, and was crowned King of Lithuania in 1253. Under Gediminas (1316-41) the united Lithuanian state was revived early in the 14th century, he and his son Algirdas (1342-77) further expanding its territories at Russian expense, defeating the Tartars at the Battle of Sinie Wody (Blue Water) in 1362/3 and absorbing most of what had once been the principalities of Kiev, Volhynia (Vladimir-Volynsk), Turov-Pinsk, Cherginov, Smolensk, Novgorod-Seversk and Polotsk by as early as c. 1360, so that a substantial part of Lithuania's population — perhaps as much as four-fifths — was actually Ruthenian and Russian. In addition the remnants of the Prussians, Jacwiez (Yatwingians) and Samogitians were assimilated following the Teutonic Knights' conquests in the 13th-14th centuries. Throughout the first half of this period, and in fact even after the union with Poland and well into the 15th century, most Lithuanians remained pagan, despite the fact that Mindaugas had been baptised as early as 1251, as was Jogailo in 1386 (though only because he thus became eligible for the Polish crown). Kings were cremated with their horses and great heaps of possessions for the afterworld even in the late-14th century, while perhaps a third of all the booty taken in battle was assigned to their gods by ritual cremation; in addition captured enemies were sacrificially burned alive, a fate that befell many Teutonic Knights, including a certain Marquard von Raschau as late as 1389. The very last pagan Grand Duke was Zygimantas Kenstutis (1432-40).

All Lithuanians were traditionally obliged to perform military service. Though there were some infantry the majority fought as light cavalry, and though their kings and boyars (*baiores* or *bajoren*) wore armour they nevertheless fought alongside the light cavalry of their tribe or family in mixed units, of which they usually formed the front ranks. These units, called 'banners' or 'standards' like those of the Poles by the beginning of the 15th century, were each about 200 or 250-strong (though some occasionally comprised as many as 3-800 men), made up of boyars and their retinues of kinsmen and upper-class peasants, collectively referred to as 'friends'. The retinue of the grand duke himself was organised on a semi-regular basis, being billeted on the local peasant community all year round so that it could be available for military service at very short notice; by the 15th century a substantial force might be maintained in this way, probably numbering about 3,000 men under Vytautus (1392-1430). At Tannenberg Vytautus even assigned one unit, under Zygimantas Kaributas (Zygmunt Korybut), to be King Vladislav's bodyguard. Other Lithuanians had to provide themselves with their own rations when on active service, which seems to have customarily been for a period of 4 or 5 weeks. The 14th century chronicler Petrus von Dusburg, a Teutonic Knight, noted that 'the king of the Lithuanians designated fixed numbers of troops to man fortresses, and after serving a month or longer on garrison duty they were replaced by others.' (The Teutonic Knights therefore always endeavoured to time their incursions so as to catch Lithuanian forces as they returned from their tour of duty.) The fortresses referred to were called by the name *garadas,* derived from the Slavic *gorod.*

One additional source of troops was provided by Tartar exiles settled in Lithuania. As early as 1299 3,000 cavalry had fled there from the Golden Horde, and at the end of the 14th century, following Vytautus' campaign down the Dnieper in 1397-98 and his defeat with Tokhtamysh at Worskla in 1399, several thousand more (a mixture of prisoners and partisans of Tokhtamysh's cause) were settled round Trakai and Novgorod-Litovsk. During the 15th century, when the Crim Horde was a vassal of Lithuania (1419-75), yet more migrated to Lithuania, Vernadsky describing these as 'Tartars, Nogays and Chuvashians'. 15th century contemporaries put the size of the Tartar contingent at Tannenberg as 300 in one instance and 30,000 in another, so it seems likely that they in fact numbered about 3,000; modern authorities, however, put their strength at only 1,000-1,500. On this occasion they were commanded by a certain Salhad or Jelal Eddin.

The largest Polish-Lithuanian army mustered during this period — inevitably that fielded at Tannenberg — numbered between 23,600 and 163,000 men according to contemporaries, but modern authorities put it at 35-60,000, comprised of 18-20,000 Polish cavalry, 2-4,000 or perhaps 10,000 Polish infantry, 11,000 Lithuanian cavalry, 1,000 or 1,500 Tartars (but, as indicated above, more probably about 3,000), plus Wallachians and Serbian cavalry, and a body of Lithuanian infantry put at 6,000 by the Polish historian S. M. Kuczynski, though he later revised his estimate to only 500. The Lithuanian cavalry were organised in 40 banners, the best-armoured of which were the 3 from Smolensk.

Artillery

Cannon were first introduced into Lithuania in 1382, being given to Grand Duke Jogailo as a present by the Teutonic Knights during one of their rare detentes. The Lithuanians were using these guns successfully by 1384 at the latest, when they were employed (along with trebuchets) in the siege and capture of the Teutonic Knights' fortress at Marienwerder. In 1385 Hochmeister Zöllner von Rothenstein was turned back from a river crossing by Jogailo's brother Skirgailo 'with innumerable bombards', and in 1388 was repulsed from Skirgailo's fort on the same river by what were presumably the same guns. Vytautus had as many as 15 large cannon in his fortress at Trakai, and a cannon foundry at Vilnius, and was probably the first Lithuanian commander to take artillery into the open field, as he did against Timur Kutluk at Worskla in 1399.

On the subject of Lithuanian artillery, Eric Chistiansen observes in *The Northern Crusades* that since guns 'could only be transported long distances by water, . . . the power upriver had the advantage of the power downriver when it came to sieges; the Lithuanians could get their cannon to the Order's forts quicker than the Order could haul its cannon to Lithuania.'

MUSCOVITE RUSSIA

The Russia of this period was a restless conglomeration of independent and semi-independent republics and principalities that, in the period from 1228 to 1462, were the scene of some 40 punitive Tartar expeditions, 90 dynastic wars and 80 invasions by Lithuanians, Poles, Teutonic Knights and Swedes. Amidst this endless turmoil, during the early part of the 14th century the Duchy of Muscovy began to replace strife-torn Vladimir as the country's political centre, managing to achieve ascendancy over all its rivals by aligning itself with the Golden Horde, which ensured the support of Mongol troops in its campaigns. Although Muscovy was thereby obliged to acknowledge its status as a tributary of the Golden Horde, relations between the Khan and Moscow's Grand Duke were nevertheless frequently strained, often resulting in armed conflict until, on the death of Khan Ahmed in 1481, Muscovy finally proclaimed its independence. Of the other major Russian states, Cherginov, Novgorod-Seversk, Kiev, Galicia and Smolensk were all satellites of or subject to the Lithuanian crown for much of this period. The huge territory of the Republic of Novgorod, of which Contarini wrote that it 'might raise a large army, but the men are worthless', became subject to Muscovy in 1471.

Although a general levy was available it was only possible to raise it in times of national emergency (Dmitri Donskoi used it to raise the army that fought at Kulikovo in 1380, for instance, as did Vasili I in the face of Tamerlane's invasion of 1395). This was because it required the willing co-operation of the nobility and a plethora of lesser princes in order to be effective, which co-operation was not generally forthcoming. For localised wars, therefore, the Grand Duke was obliged to depend on his own retinue, the *dvor* or court, which by this period was comprised of ducal retainers who received lands, hereditary by c.1340, in exchange for their service either for life or for a specified length of time. The nature of such land-grants changed somewhat in the latter part of this period (after the annexation of Novgorod), when they were no longer recognised as privately-owned land, but rather as state-owned with the holder being installed as a landlord. These grants were known as *pomestiia*, and the holder was called a *pomestnik*, or *pomeschik*. The dvor was expanded considerably from the end of the 14th century onwards, particularly during and after the reign of Vasili II (1425-62), who probably had about 5,000 *dvoriane* by the end of his reign. In fact, by this date it had in effect become a standing cavalry army, commanded by its quartermaster-general (*okolnichi*, a post of Mongol origin first mentioned in Muscovy in 1350/1). Other senior posts in the dvor were those of *dvorskii* (major-domo) and master of the stables, the latter being held by a military officer who was responsible for the ducal stables, for horse-breeding, and supplying the army's horses.

The dvoriane and the *Deti Boyarskie* ('Boyar Sons', lesser retainers posted in the towns of the duchy) inevitably provided the nucleus of the Muscovite army, but in the field they were normally backed up by the retinues of the Grand Duke's brothers (who were liable to provide such service whenever called upon), plus vassal princes and the Muscovite boyars' own dvors, which could be considerable (two in Dmitri Donskoi's service in 1382 had retinues of as many as 1,700 and 1,300 men). All of these were cavalry, infantry being provided by city militias (only rarely including the rural peasantry) and cossacks, about whom more will be said below. The city militia or *Veche*, however, had declined considerably in the wake of the 13th century Mongol invasion, and was no longer of the same importance as it had once been, so that the post of *Tysiatsky* (commander of the militia — see *Armies of Feudal Europe*) was actually left vacant on the death of its last holder, Vasili Veliaminov, in 1374. The civic militia, now under the control of the okolnichi,

underwent something of a revival under Vasili II and Ivan III (i.e. in the period 1425-1505), often being called up for frontier duty and siege-work. The decimal organisation set out in *Armies of Feudal Europe* appears to have persisted throughout this period, with units of 10, 100 and 1,000 men.

In the field the army's commanders were traditionally chosen from among the princes and boyars according to status and seniority. The Grand Duke's own standing troops were led by an appointed general called a *voevoda* (i.e. voivode) if the duke himself was not with them, while the infantry element of the army was commanded by a subordinate voivode.

Tartar auxiliaries and Cossacks

Tartar auxiliaries could be found in Muscovite armies throughout much of this period. One 16th century chronicle mentions that when Tamerlane attacked Khan Tokhtamysh in 1395 three important Tartar chieftains then took service with Vasili I, while Tartar troops are frequently referred to in Muscovite armies during the troubled years of the mid-15th century. Each chieftain and his warband usually received a town and its district for their subsistence, by a system called *kormlenie*. Those of them who were descendants of the house of Genghis Khan were called *tsarevichi* ('tsar's sons').

The Cossacks too were of Tartar origin, their name being derived from a Turkish word (*quzzaq*) meaning 'seceder' or 'adventurer', i.e. men who operated outside of the Khan's authority. They probably originated in the 14th century, but are only first mentioned in Russian sources in 1444, in the Riazan area, and in 1445 when they are found fighting for the Lithuanians. Serving as both infantry and cavalry under their own *atamans* (hetmans, or chieftains), they were at first chiefly used as border-guards — Josafa Barbaro, for instance, while travelling to Persia in 1474, recorded how Vasili II had in his service a 'Tartar' in command of '500 horsemen to guard the frontiers of his territory from the incursions of the Tartars.' They were organised in units called *druzhines*.

Artillery

Some authorities argue that Russia first encountered gunpowder artillery in 1376 during their siege of Great Bulgar on the River Volga, in the far north of the Golden Horde's domain. However, all that the relevant original source actually says is that 'thunder was thrown', and many Russian archaeologists understandably maintain that it is not cannon that are actually intended, but clay grenades such as have been found in the Volga region. Whatever the truth may be, it is undeniable that in 1382* a strong garrison left in Moscow by Dmitri Donskoi was equipped with *pushki* and *tiufiaki*, seemingly the first irrefutable evidence of the use of gunpowder artillery in Russia. Regarding the specific terminology used, it is interesting to note that *pushka* derives from the Bohemian word *puska* or its German equivalent *Püchse*, which tallies with one early Russian chronicle's comment that 'cannon arrived from Germany [*Nemetz*]'. However, the use of the term tiufiaki is also interesting, since it is the same as the Turkish word *tufek* (see figure 7), which may therefore imply that artillery was introduced into Russia from both East and West simultaneously.

Although the first guns may very well have been imported from Bohemia or elsewhere, they were certainly being cast in Russia by the 15th century, and the evolution of artillery in Muscovy thereafter followed much the same course as that of Western Europe (which is hardly surprising since the majority of Russia's gun-founders and master gunners were Germans and Italians). Light, mobile guns called *pischali* (from the Bohemian pištaly) appeared in the first half of the 15th century (in Tver by 1408, and in Moscow by 1451), one later chronicle even claiming that they were used in the field against the Tartars as early as 1380. However, the Muscovites tended to use their artillery principally from fixed positions — i.e. in the defence of their cities — only rarely using them in sieges, and then usually ineffectively, and taking them on campaign even less, though some certainly accompanied Ivan III's army at the Ugra Fords in 1480. In 1481 his guns (actually, those from Pskov) achieved their only siege success of this period, by breaching the walls of the Teutonic Knights' fortress at Fellin in Livonia, which achievement may be connected with the first appearance in Russia at about that date of large, brass guns, the earliest surviving example dating to 1485.

The transport of artillery, along with the infantry and sometimes even the cavalry, was often achieved by boat, utilising Russia's complex of rivers. (This was a mode of transport also used by the Tartars, as, for instance, by Tokhtamysh against Moscow in 1381.)

THE GOLDEN HORDE

The origin of the Volga or Golden Horde, which was named after the gilded and gold-embroidered tent of

*Older works, pre-dating the discovery of this earlier reference, usually cite 1389 as the date of introduction.

Genghis Khan's grandson Batu Khan (1226-55), dates to 1251 when Batu established his rule in Sarai, which subsequently broke away from the central Mongol state in 1266 under Mangu Timur. Superficially Islamized c.1340, it began to decline after the death of Khan Janibek (1342-57), when assorted rivals vied with one another for the throne. In the 20 years between 1360-80 the Horde had as many as 14 different khans, of whom the last, Mamai, was defeated in the signal Russian victory of Kulikovo. Its power was further eroded under his successor, Tokhtamysh of the Blue Horde* (1380-97, d.1406), who was defeated by fellow-Moslem Tamerlane in three decisive campaigns in 1387, 1389 and 1395. The Horde continued to wane throughout the 15th century, with the Crimea (1430), Kazan (1445) and Astrakhan (1466) breaking away as separate, independent khanates, all of them individually stronger than the remaining residue of the Golden Horde itself. It was the Crim Tartars who, in 1502, finally overthrew the Golden Horde; they had become vassals of the Ottoman Turks following the seizure of the Crimea by the latter in 1475, and from the 1480s launched a series of Ottoman-inspired attacks against Poland under their khan, Mengli-Girei, even sacking Kiev in 1482. After achieving their own independence from the Golden Horde in 1481, the Muscovites usually referred to what remained of it as the 'Great Horde of the Volga Tartars'.

The military organisation of the Horde was fundamentally unchanged from that of Genghis Khan, with units of 10, 100, 1,000 and 10,000 men, grouped into right (western) and left (eastern) wings with a central division made up of the khan's guards. The country was divided up into units which were responsible for raising the requisite numbers of soldiers on the basis of one per 10 men, the largst being the *t'ma*, responsible for raising a *tuman* or horde of 10,000 men. The Russian Grand Duchy of Vladimir, wherein lay Muscovy, comprised 15 such *t'my* in 1360 and 17 under Tokhtamysh Khan, not including the 2 t'my of Riazan, the 5 of Nizhni-Novgorod and those of Tver (probably at least 5). A document of 1507, recording the situation as it nominally existed c.1428, records the existence of the following West Russian t'my (most of which had in fact been lost to Lithuania by 1363): Kiev; Volhynia (Vladimir-Volynsk); Lutsk; Sokal; Podolia; Kamenets and Braslav (both in Podolia); Cherginov; Kursk; Egolday (part of the old principality of Pereyaslavl, the original t'ma of which it probably replaced); Liubutsk and Okhura (both only mentioned in a 1540 copy of the list); Smolensk; Polotsk (actually centred on Vitebsk); and Riazan (at least 2 t'my, Riazan and Pronsk). The following can also be added for the early part of this period: Galicia (probably 3 t'my, lost to Poland 1349); Galich; Lvov (Polish Lwów); and Sanok. In total, East and West Russia amounted to more than 43 t'my. Considering the size of the Horde, it is therefore no surprise to read that Egidei (1397-1410) was supposedly able to field 200,000 first class cavalry 'at a moment's notice'.

Military service was obligatory and was performed at the individual's own expense; nor was there any time limit on how long it might be required. The Cilician Armenian chronicler Hetoum wrote in 1307 that 'in matters of arms they are very good, and more obedient than any other people; and in battle do easily know by certain signals their commander's will: whereby the Tartar army is easily governed and commanded. Their lord does not bestow any stipend on them, but they live by hunting and such prey as they can get; and their lord can take from them whatever they have whenever he wishes to.' Vassal princes, ruling under Mongol patents, were likewise expected to provide such service — Khan Mamai, for instance, claimed to have in his army at Kulikovo 12 hordes, 3 kingdoms and 33 princes, and his forces (allegedly 703,000 men, but probably 150,000 at most) certainly included Turks, Armenians, Burtas, Circassians, Ossetians, and even Genoese infantry from the colony of Kaffa in the Crimea. In the 1330s Russian troops could be found serving in Mongol armies even as far away as North China.

Gunpowder artillery was unknown to the Tartars, and this despite the presence of the Genoese in Kaffa, which in the 1430s Pero Tafur records as 'well provided with crossbows, bombards, cannon, handguns and culverines, and all manner of defensive artillery.' Indeed, an attack on Kaffa following its capture by the Ottomans in 1475 was scared off simply by the roar of the Ottoman artillery, to which the Tartars were unaccustomed.

TACTICS

THE OTTOMAN TURKS

Although in the early part of this period they fought in traditional Turkish fashion, by the second half of the 14th century the Ottomans had begun to adopt a battlefield formation that, though it underwent gradual

*Western Siberia and Kazakhstan.

evolution, was to remain fundamentally unchanged for the next two centuries. The essential ingredient in this new battle-array was the use of barricades and entrenchments to guard the sultan's position in the centre of their line, stoutly defended by infantry and flanked by cavalry. In their earliest form, as they appeared at Nicopolis and Kossovo, these defences simply comprised a ditch and stakes; Boucicault's biographer describes those at the former battle as 'a great abundance of pointed stakes . . . set into the ground at an angle, the points turned towards our men, so high that they could enter a horse's belly'.* The ditches too provided an effective defence against cavalry: at Varna in 1444 Konstantin Mihailovic tells us that the Janissaries forming the Ottoman centre took up positions behind trenches that were 'amidst tall heather, so that they enemy could not see that there was a trench before them', the Janissaries feigning flight to lure the Christian cavalry on and then killing them when they floundered in the concealed ditches. Mihailovic elsewhere provides a good description of the sultan's entrenched position, in which he had 'the Janissaries before him, and behind them the camels; and also, a trench is made all around, and a rampart heaped up next to it. Wooden stakes are set out thickly on the rampart, and shields are set up atop it one beside another. Embrasures [are made] so that they can fire their cannons. Stationing themselves at a shield they [also] shoot arquebuses.' The 15th century 'Ordo Portae', describing the sultan's position at a similar date, likewise says it was 'fortified with the aid of ditches and iron chains; all round there are camels, donkeys and mules as well as engines of war, a multitude of cannons and arquebuses and other similar arms'.

Note the references in both the above sources to the use of camels as part of the defences: the Ottomans were aware of the dislike horses had for camels and therefore frequently posted them to the fore to deter enemy cavalry, as at Varna. In Bertrandon de la Brocquière's words the Turks 'often post to their front a great body of dromedaries and camels, which are bold and vicious; these they drive before them on the enemy line of cavalry, and throw it into confusion.' The 15th century Ottoman chronicler Neshri records an interesting conversation allegedly held between the Turkish commanders before the Battle of Kossovo in 1389, where one conceded 'that the infidels' horses will not run against the dromedaries', but nevertheless recommended that they not be placed in the front line in case they should panic and thereby disorder the Turks' own lines. (Apparently fireworks might also be used to frighten the enemy's horses by being thrown under their feet.)

The final stage in the evolution of this defensive battlefield formation was the incorporation into its defences of artillery and wagons. As has already been mentioned elsewhere, field-guns had appeared in Ottoman armies by the 1440s at the latest — at Varna, for instance, an anonymous Turkish chronicler describes how the Ottomans and Christians 'shot each other with cannons, handguns and crossbows', while Chalkokondyles and the 16th century chronicler Sa'ed ed-Din record the positioning of guns in the centre of the Turkish line, in front of the sultan, at Kossovo in 1448. The incorporation of both guns and wagons into the sultan's battlefield entrenchments was undoubtedly a result of Hungarian influence, for there had been ample opportunity for them to witness their tactical potential in clashes with the latter. This would seem to be confirmed by the fact that the Turks called their own wagon-fortress a *tabur* (cf. tabor). At what precise date the wagon-fortress actually superseded the ditch-and-camel barricade is unknown, but it was probably some time around 1470. Certainly Brocquière in 1433 had observed that the Turkish nation 'does not use wagons', and Mihailovic, writing of the period around the 1460s, similarly stated that they 'have no wagons', relying instead on camels, mules and horses for the transport of their baggage. However, an Armenian source of 1473 mentions how Mehmed II's army, campaigning against Uzun Hasan, entrenched itself in a wagon-fortress 'as large as a city, and it was locked together with enormous chains and planks', Caterino Zeno similarly reporting the use of such a wagon-fortress during the campaign. Ibn Tulun, writing of the army fielded against the Mamluks by Sultan Selim in 1516, describes such a tabur as comprised of a mixture of wagons (*'araba*) and wheeled pavises, or 'fortresses' (*qal'a*), fastened together with chains and each carrying a gun capable of firing lead shot the size of a man's fist, ammunition being kept in a large box under the wagon. On the march such wagons were drawn by 2 mules.

Irregular infantry were normally drawn up in front of the fortified entrenchments manned by the household division. This had become the recognised battlefield position of the 'azabs by the 16th century, and even at Kossovo in 1389 and Nicopolis in 1396 we find them drawn up behind or before the stakes protecting the centre of the sultan's line. Mihailovic, however, says in his description of Ottoman tactics that the 'azabs were drawn up 'beside the imperial earthworks', similarly but less comprehensively entrenched ('dug in and surrounded with stakes' is how he puts it). Normally the majority were archers and slingers (and, later,

*Interestingly this is nearly 20 years before such pointed stakes were adopted as a key element in English tactical thinking. Perhaps the Duke of York's suggestion to King Henry V in 1415 that his archers should equip themselves with such stakes was prompted by the advice of a veteran of the Nicopolis crusade?

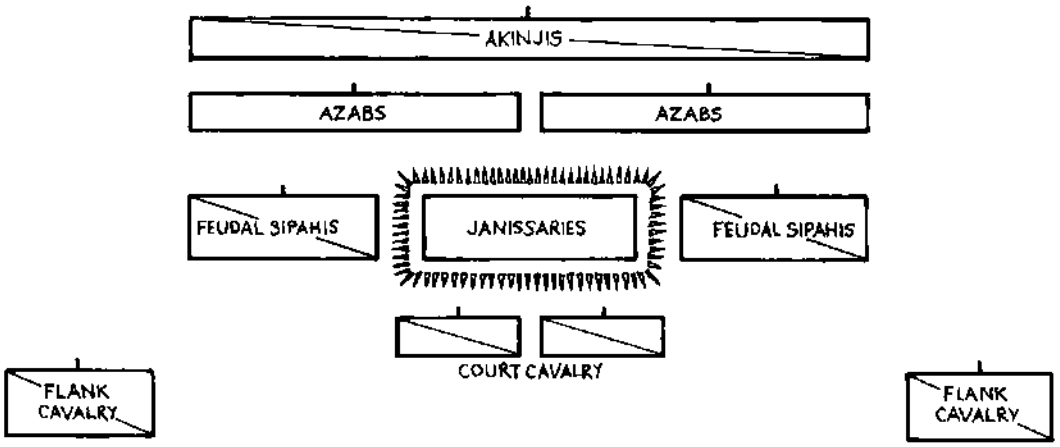
handgunners), since it seems to have been customary for missile-men to precede Ottoman armies, both in battle and on the march. Ahead even of the 'azabs were the irregular cavalry, the akinji, whose job it was to lure the enemy into attacking, upon which they and the 'azabs would then wheel away to either side to reveal the entrenched centre, as they did at Nicopolis. In the last decades of the period under review this would be the signal for the artillery to open fire and the wings of the army, comprised principally of feudal sipahis, to advance and, where possible, envelop the enemy. 'Should they find the army well drawn up', says Brocquière, 'they curvet round it within bowshot, and, while thus prancing, shoot at the men and horses, and continue this manoeuvre until eventually the enemy is thrown into disorder.' (Concentrating their archery on the enemy's horses was a tactic they commonly employed: Schiltberger, describing Philippe de Nevers' attack at Nicopolis, reported that 'more than half his cavalry were unhorsed, for the Turks aimed at the horses only'. Mihailovic similarly wrote that, confronted by armoured cavalry, the Turks were 'ordered by the sultan to look to the horses and not the men', and in close combat would 'beat and wound the horses' with their swords and lances.)

Brocquière reports that Ottoman cavalry invariably outnumbered that of their Christian adversaries (indeed, he believed that it was Ottoman policy to field armies that were 'twice as numerous as those of the Christians'), and he also observed that 'their horses, though inferior in strength to ours, and incapable of bearing such heavy weights, gallop better, and skirmish for a longer time without losing their wind.' Combined with their light armour, this latter factor was what gave the Turks such an advantage in any form of fighting except close combat, when the heavier armament of the Christians almost invariably prevailed. Mihailovic rightly observed that if Christians pursued Turks the latter merely fled, but, if the situation was reversed, Christians were unlikely to escape: this was because Turkish horses, as a result of 'their great lightness', were always fleet of foot, whereas Christian cavalry were 'always slow because of the great burden of armour'. Even when they did break in rout, Turks still needed to be pursued with caution since the feigned flight remained one of their characteristic tactics now as in earlier times. Brocquière wrote that 'it is in their flight that they are formidable, and it has been almost always then that they have defeated the Christians. In flying they have the adroitness to shoot their arrows so very accurately that they hardly ever fail to hit man or horse.' In addition, if their pursuers became disordered the Turks could be easily rallied by the use of drum signals (see note to figure 31), upon which they would suddenly turn and 'according to circumstances either receive the charge of their assailants or fall on them in troops and counter-attack them in different places simultaneously.'

Where the army was led by the sultan himself the cavalry on the wings were comprised of the feudal troops of Rumelia on one side and Anatolia on the other, commanded by their respective beylerbeys. More often than not the Rumelians formed the left wing and the Anatolians the right, but their positions could be reversed (as at the first Battle of Kossovo, and Varna), there being some evidence to suggest that the right flank may have been most often held by the troops of that half of the Empire in which the battle was taking place. Certainly the station held by provincial troops on the march depended on the theatre of war; the 'Ordo Portae' tells us that 'when the sultan goes to war in the West it is the chief of Rumelia who marches at the head with all the Western troops, and the chief of Anatolia with his Eastern troops follows after the sultan and his Porte. When the sultan goes to war in the East, it is the chief of Anatolia who marches at the head', and 'when the army returns from the East it is the other way round'. Following the mediaeval Western European convention of deployment, where the vanguard becomes the right wing on the battlefield, this would certainly put Rumelian troops on the right wing in Europe and Anatolians on the right wing in Asia. However, this order of march was not always followed: Barbaro describes the army that marched against Uzun Hasan in 1473 as having the Anatolians in the rearguard and the Rumelians, complete with Serbian, Albanian and Greek contingents, in the vanguard, which tallies with the Anatolians being found on the left wing at the Battle of Otluk Beli.

From all the above it can be seen that by the 15th century the characteristic Ottoman battle-formation was basically as set out in the diagram overleaf, with the sultan in the centre protected by the Janissaries and court cavalry, with feudal cavalry to left and right, and 'azabs and akinjis to the fore. After the mid-15th century artillery (and, slightly later, wagons) were added to the centre's defences. Also, detached flank units of cavalry, usually Tartars or Serbs, were sometimes concealed to left and/or right of the main formation, as at Nicopolis. As has already been seen, and as will be further witnessed from the battle descriptions given later, subtle variations of this basic formation abounded.

The whole strength of this battle-array pivoted round the sultan's central defensive position, against which the enemy's attacks more often than not came to grief. Mihailovic counted the launching of a head-on attack against it as a fundamental tactical error, observing how at Varna and second Kossovo the Christians had



'squandered themselves, heedlessly rushing the sultan's courtiers'. This formation did have weaknesses, however, the foremost of which, according to Mihailovic, was that 'their infantry cannot remain in the field long, for they do not prepare [i.e. provision] themselves for a long duration, believing that it will always turn out for them as it has turned out previously.' He also recommended that rather than attacking their defences head-on, the Christians should employ artillery against them, while at the same time shooting fire-arrows amongst the Turks' camels from the rear, stampeding them 'so that their infantry would be trampled and smashed to pieces'. Even more astute was the observation of one Paolo Giovio, who in the 16th century ended a survey of Ottoman tactics with the warning that whoever launched an attack against the Turks would be defeated, whilst whoever waited for the Turks to attack first would be victorious.

THE BYZANTINES

Byzantine warfare in this period was limited largely to the siege and defence of fortresses, since after the rise of the Ottoman Turks in the first half of the 14th century the Empire's military resources were too limited to be risked in open battle. As a result virtually no details of 14th-15th century Byzantine tactics have survived. We know only that by the beginning of this period they usually drew up with infantry in the centre and cavalry on the wings, plus a reserve of more cavalry to the rear, the whole seemingly being arrayed in close order, which all sounds little different from the battlefield formations then current in Western Europe. 14th century manuscript pictures indicate that the infantry archers laid down a barrage first, which was then followed up by a cavalry charge. The Byzantines' own heavy cavalry clearly charged with their lances couched in Western fashion, but the varied auxiliary troops that the Empire employed fought in their own traditional fashion; in the first half of the 14th century these were principally Turks and Serbs. Some Byzantine cavalry themselves still carried bows, and though there is little indication of their use in the 14th century they had clearly undergone a revival by the early-15th century as a result of Turkish influence (see figure 55).

THE MAMLUKS

According to a military manual of c.1400 the Mamluks still customarily drew up in the old *al-khamis*, or 'five' formation, so-called from the army's deployment in 5 divisions comprising centre, left flank, right flank, vanguard and rearguard. They preferred to draw up with their backs protected by a river or high ground, otherwise digging ditches or establishing ambushes to defend their rear. The army commander would also try to get the sun and wind behind him, particularly important in the Middle East where the wind whipping up clouds of sand or dust into soldiers' faces could be a severe tactical disadvantage; if the wind should turn out to be blowing against their own army, the Mamluks apparently favoured dismounting their cavalry to fight on foot rather than have them disordered by their horses becoming unmanageable. The cavalry of the vanguard were selected from those 'outstanding for strength and courage, conquering spirit and experience in war'. They might be subdivided into centre, left and right, the latter often being referred to as 'the 2 advance guards' or 'the 2 wings', and all 3 bodies might even be further subdivided so that the whole vanguard might actually comprise 9 individual squadrons (*karadis*). The centre, where the army standards and commander were invariably stationed, might be similarly subdivided. The Mamluks favoured fighting in line (the 'closed formation' praised by Ibn Khaldun), otherwise usually drawing up in crescent

formation with their wings either thrown forward (*hilali*) or drawn back (*mujannah*). Circular (*kurah*), rectangular (*murabba*) and wedge-shaped (*mustatil*) battle formations are also recorded.

Ambushes remained an important Moslem tactic as in earlier times. An early-14th century Damascene military manual by Mohammed ibn Isa states that units placed in ambush could, indeed should, comprise a third or even two-thirds of the army's strength. They should not be positioned more than 1¼ miles from the main army, and should be divided up into 3, positioned one each to the left and right of the enemy with the third troop, drawn up behind the main army, responsible for reinforcing and supporting the 2 advance ambush units. It was recommended that only one of the ambush units should reveal itself initially: 'if the enemy sees them to be few in number they will seek [to attack] them and when the Moslem force is routed will give chase, and then the second group will break out upon them . . . Once they have gained their objective they should return straightway to their positions.' The manuals recommend that a routed enemy should be pursued only with caution in case it should prove to be a feigned flight. Only the flanks should pursue, while the main body should advance at a steady pace, and the flanks should never pursue beyond sight of it.

Military manuals also provide details of the role of infantry in battle, though they are rarely encountered in the chronicles. If the army was caught unprepared the infantry were expected to hold the enemy back until their own cavalry were mounted and drawn up. This they did by forming line and going down on one knee with their shields to the fore and spears held out 'from the upper part of the chest'; their archers were meanwhile to shoot into the enemy's faces. That infantry were actually employed in this role is confirmed by al-Maqrizi, who reports of a battle in 1354 that 'the infantry stood in front of the cavalry with large shields to intercept the missiles. The cavalry stood behind them in safety with their weapons ready.'

Artillery was not employed on the battlefield until the very last days of the Mamluk era. Though Qansuh al-Ghawri, during the Ottoman invasion of 1516, left the largest part, if not all, of his artillery in Aleppo before marching out to defeat at Marj Dabiq, his successor Tuman Bey actually deployed his guns in prepared, entrenched positions for the Battle of al-Raydaniya in 1517. However, these were heavy, unmanoeuvrable guns that proved of little consequence against a highly mobile foe. Experiments aimed at increasing the mobility of his firepower, by putting arquebusiers and light guns in ox-drawn wagons called *ajalat min khashab* and by mounting heavy arquebuses on camel's humps, proved similarly ineffective, even though as many as 100 wagons mounting copper cannon were included in the army that marched to al-Raydaniya.

THE TARTARS

Tartar tactics remained essentially unchanged from those described in *Armies and Enemies of the Crusades*, relying principally on envelopment, horse-archery and feigned flight. In 1307 Hetoum wrote that Tartars 'are for the most part victorious over their enemies; yet they are not afraid to turn their backs in a fight if it is to their advantage . . . Their manner of fighting is very dangerous, so that in one Tartar battle or skirmish there are more slain or wounded than in any great conflict between other nations, which results from their archery, for they shoot strongly and surely, being indeed so skilful in the art of shooting that they commonly pierce all kinds of armour, and if they happen to be routed they flee in troops and bands so well ordered that it is very dangerous to follow or pursue them, because they shoot arrows backwards in their flight, often wounding both men and horses that pursue them.' These tactics were used, for instance, in a battle between Tamerlane and the Mamluks outside Aleppo in 1400: 'By cleverly feigning flight the Timurid hordes opened up a path for the sultan's army and permitted it to get well inside their lines. Then they closed in at the same time and bore down upon the sultan's troops as though the latter were closed within a wall.'

Usually they drew up in between 5 and 7 divisions, comprising centre, left and right wings, vanguard and reserve, sometimes with additional reserves for the wings, with the Khan himself generally to be found in command of the centre or the reserve. The vanguard was generally sizeable, and its initial onset (launched in a sequence of waves) was often enough to secure the victory; if it failed in this objective, then the centre, usually the largest element of the army, would advance to its support. The principal Tartar tactic, however, remained encirclement, from one or both flanks, as will be seen from the battle descriptions in the next section.

INDIA

The armies of Delhi and its assorted successor states employed the traditional Moslem battle-formation, comprised of centre (*qul* or *qalb*), left-wing (*jaranghar* or *maisarah*), right wing (*baranghar* or *maimanah*),

vanguard (*harawal*) and rearguard (*chandwal*), plus advance flank units (*jinah*, or 'wings') and an advance reserve (*iltimish*) on the flanks of the centre. The 3 principal divisions, i.e. the centre, left and right, seem to have occasionally been of equal strength, but normally the centre was the strongest since this is where the sultan was invariably to be found. Also in the centre, ahead of the sultan, would be the army's war-elephants, followed and preceded by infantry, the job of those preceding them being recorded by al-'Umari as 'to attack the sawars of the enemy in order to make way for the elephants. They hamstring their horses with swords and then the archers in the towers [of the elephants] shoot arrows from the rear and put the rival sawars to flight. Thereafter the sawars of the right and left wings encircle the rival army and fight round the elephants and in the back of them. As a result the rival army does not find room to break through and fight.' The 'Adab-u'l-Muluk' recommends that the infantry should be drawn up in 4 lines, with gaps for their cavalry to sally out. For all that the cavalry were more highly regarded, in the 15th century Nikitin too observed that in battle 'the men on foot are sent first', though clearly it was the cavalry who normally decided the outcome.

Clearly elephants were not expected to break through the enemy's ranks unsupported (though they sometimes did), and it is readily apparent from the sources that they were not particularly employed because they gave any kind of tactical advantage at all, but rather more because they lent pomp and prestige to an army. Indeed, Indian claims that a single elephant was as effective in battle as 500 horsemen were sadly misplaced, since they could be so easily neutralised by the simple expedient of killing their mahouts. Their psychological effect, however, could be considerable; Tamerlane himself wrote in 1398 how 'it had been constantly dinned into the ears of my soldiers that the chief reliance of the armies of India was on their mighty elephants; that these animals, in complete armour, marched into battle in front of their forces, and that arrows and swords were of no use against them; that in height and bulk they were like small mountains, and their strength was such that at a given signal they could tear up great trees and knock down strongly-built walls; that on the battlefield they could take up a horse and his rider with their trunks and hurl them into the air.' In the ensuing battle, however, the Timurids, like most of those before them who had ever been confronted by elephants, 'brought the elephant drivers to the ground with their arrows and killed them' before attacking and wounding the elephants with their swords; Ferishta adds that 'these unwieldy beasts, deprived of their mahouts, fled to the rear, and communicated confusion to their own ranks' (i.e. rendered many of their own side two-dimensional).

Certainly few of the elephants themselves were ever killed, because of their armour, their thick hides and their own intelligence (they sometimes threw off their drivers and ran for it); Simon Digby, in his *War-horse and Elephant in the Dehli Sultanate*, records that the largest number of elephants known to have been killed in battle in the mediaeval era was 30, out of 200, at Kili in 1299, this high figure resulting from the Delhi army having been completely surrounded by the Mongols. More usually only 2 or 3 elephants were killed in a battle, though it was not uncommon for large numbers to be captured; in 1354, for instance, of the 50 elephants fielded against Firuz Shah Tughluq by the sultan of Bengal, 3 were killed and 47 taken captive. If wounded they would normally flee (Barbosa says 'they take to flight at once, and overthrow one another, even those of their own side'), though Clavijo, who saw Tamerlane's elephants (captured from the sultan of Delhi), wrote that 'when they are themselves wounded, they become more fierce, rush about more wildly and fight better.' Varthema reported that 'if at any time they are put to flight it is impossible to restrain them'.

As already noted, the elephants were usually positioned in front of the sultan's position in the centre, but they could also be found ahead of the wing divisions too — 'Islami records 200 to have been positioned on the wings at the Battle of Kili in 1299, while descriptions of Firuz Shah's campaigns of 1354 and 1362 state that his forces were drawn up 'in 3 divisions, a centre and two wings. The elephants were divided among the 3 divisions.' In Hindu armies it was even possible to find them all positioned on one or other wing — Barbosa records of the king of Vijayanagar that his elephants were 'well drawn up in line on the right before him'. They might not always have been preceded by infantry either, since it is apparent that they sometimes actually charged the enemy (in 'a fast shuffle of about 15 miles an hour'), under which circumstances it would not have been practical to place one's own infantry before them.

Hindu tactics concentrated on archery, skirmishing and the use of elephants, the last apparently being a hindrance more than a help since the Moslems more often than not seem to have succeeded in stampeding them back through their own lines by the use of fireworks or by charging them with cavalry (whose horses were accustomed to them through the presence of elephants in their own armies; not so Tamerlane's horses, which 'were afraid of the elephants and would not advance'). Indian historian S. T. Day has written that throughout this period 'the elephant — the so-called living tank of Rajput armed forces — remained the cause

of their defeats, and yet they do not appear to have thought of abandoning the animal or employing it in such a manner as would make it less dangerous to their own armies.' The cavalry of the Hindus was similarly rather unimpressive in the field, being outclassed by the Moslems, who almost invariably scattered them; given the chance, their most characteristic battlefield tactic was to charge headlong towards the enemy's front and then suddenly wheel and fall unexpectedly on his flanks instead.

SERBIA

In the early part of this century C. J. Jireček wrote that mediaeval Serbian soldiers were excellent fighters in their native mountains and forests but, in the words of Cantacuzene and Kydones, 'did not much care for fighting away from home' — indeed, Cantacuzene described the greater part of their army as 'a useless lot'. This view is that of an enemy, however, and in fact it is clear that under the right conditions Serbian cavalry could put on a pretty impressive display: they broke the Ottoman left flank at Kossovo, won the Battle of Nicopolis for the Turks with their decisive charge, and even broke through Tamerlane's troops at Ankara. Doukas describes the attack of the Serbians at Ankara as being launched 'with martial fury, tilting their lances in the face of the Tartars. When the Tartars saw their ferocious and daring charge they opened their ranks and let them through . . . When the Serbs turned, the Tartars again opened their ranks and let them through. Many fell on both sides.' Charging again, they broke through the enemy's centre, 'dispersing them with great force and unhorsing many' — no mean feat considering that Tamerlane's army was at that time the most consistently successful in the known world.

The characteristic Serbian battlefield formation comprised 3 divisions as in Western Europe, but with the notable difference that the cavalry formed the front lines with the infantry behind them, the role of Serbian infantry being to mop up in the wake of the cavalry and otherwise support their attack. Many Serbian infantry were archers and crossbowmen, and Temperley states that the 'deadliness of Serbian archery was recorded by Western crusaders'.

MOLDAVIA and WALLACHIA

The nature of their terrain inevitably resulted in the Roumanians relying heavily on skirmishing tactics, harassing the enemy on the march and thereby luring him onto a battlefield of their own choosing. This was usually especially chosen for its defensive characteristics, which were specifically intended to restrict the enemy's use of cavalry or superior numbers to advantage — the Battle of Posada, for instance, was fought in a narrow mountain pass where the Hungarians could not deploy their forces, while Doukas describes how in the face of a Turkish invasion the Wallachians deployed their troops 'along mountain defiles and in wooded areas', leaving the plains deserted. Similarly, at Vaslui and Valea Alba respectively the Moldavians drew up on marshy ground and in woodlands. In addition, in both these latter instances the Moldavians actually fought from prepared defensive positions, behind ditches and ramparts defended with artillery, a practice which was fairly certainly copied from the Ottomans. The Wallachians, however, seem to have continued to favour hit-and-run tactics, even at night, to such an extent that Konstantin Mihailovic, who accompanied Mehmed II's invading army in 1462, admitted that the Turks 'were greatly afraid' and every night surrounded their camp with ditches. It was probably because of their dependence on such raiding tactics that the Wallachians made less use of artillery than their Moldavian neighbours; nevertheless, Mihailovic reports that at Mehmed's crossing of the Danube cannon fire from Wallachian gun emplacements killed as many as 250 Janissaries, and the sultan was obliged to lay down covering fire from his own 120 guns so that the 'azabs could cross to the Janissaries' support.

Drawn up in formal array, Roumanian infantry generally preceded cavalry in the normal way, most of them missile-armed (principally archers). The Moldavians tended to keep back the majority of their cavalry as a reserve, often concealed to one side, and loosed them in a decisive charge when the enemy had been appropriately worn down by skirmishing. A battlefield success was normally followed by a particularly ruthless cavalry pursuit.

It should be noted in closing that under Dracula pyschological warfare was also employed, his bloody executions by impalement of all his enemies, Wallachian and Ottoman alike, spreading such fear among the Turks that he thereby gained a morale ascendancy that remained unshaken right up to the time of his death. Indeed, when Mehmed II arrived before the Wallachian capital of Targoviste — abandoned and burnt by the retreating Wallachians themselves — he was so stunned to be confronted by the impaled, rotting bodies of executed Turkish prisoners that he is supposed to have said 'What can we do against a man like this?', and subsequently abandoned the campaign. Doukas actually says that Mehmed was thereafter 'terrified of the night'.

ALBANIA

Albanian tactics appear to have been identical to those of the Roumanians, and especially the Wallachians, including a heavy dependence on harassment and skirmishing. Once again, this was dictated by the mountainous nature of the terrain, Kritovoulos describing Albania as 'protected on all sides by great abysses and deep forests and steep and precipitous places.' In particular the Albanians were noted for their abilities in the defence of mountain passes, which Kritovoulos tells us they guarded 'with strong garrisons'. Their successors, the stradiots, were frequently employed in this role by both the Venetians and the Byzantines of the Morea.

HUNGARY

Although their use of wagon-fortresses on the battlefield had increased noticeably by the mid-15th century, Hungarian tactics remained basically unchanged throughout most of this period. Hardly surprisingly, they were in effect a compromise between those of Eastern and Western Europe. For instance, though they had conventional feudal heavy cavalry who charged in characteristic 'knightly' fashion, either in lines or in columns about as many ranks deep as they were wide, it is nevertheless possible that their armament may have actually included Asiatic-style composite bows (see note to figure 88). There was, anyway, a proportionately smaller number of this particular troop-type available, so that they tended to be used sparingly in battle. Instead, the Hungarians relied particularly heavily on light cavalry, who fought largely in a skirmishing capacity ahead of the heavy cavalry on the battlefield, and as raiders and ambushers on the frontiers.

Wagon-fortresses, though nothing new to Hungarian warfare (one having been fielded at Mohi in 1241, for example), began to be allocated a more positive battlefield role under Janos Hunyadi in the 1440s, who introduced Hussite tactics via the large numbers of Bohemian mercenaries being employed in Hungary by that time. The wagon-fort played an important part at both Varna, where it provided a refuge on which the army could fall back if hard-pressed, and the second Battle of Kossovo, where it was predominantly manned by Bohemian and German handgunners. Sebastiano Baduario, a Venetian observer, reported that in a battle with the Ottomans Hunyadi's son King Matthias Corvinus had as many as 3,000 wagons, while another Italian, Antonio Bonfini, claims that at a military review held at Wiener Neustadt in 1475/9 as many as 9,000 wagons were present which, he reports, were not only used to defend the camp 'but also, as Hunyadi taught, they are armed with scythes and used to encircle the enemy in battle.' Indeed, in what Bonfini describes as the speciality of Hungarian tactics, the so-called 'scorpion' formation, such wagons supported by light and heavy cavalry formed the army's pincers, with the infantry and wagon-fortified camp forming the scorpion's body, the infantry being drawn up in a square in front of their camp. It may have been just such a battle-array, or one very similar, that secured Hunyadi his victory at Nagyszeben in 1442, where an attack against one flank by wagons fitted with guns broke the opposing Turks.

Hungarian infantry of this period were much superior to their 12th-13th century counterparts, though their battlefield role still tended to be defensive in nature. They are best described in King Matthias' own words, as written in 1480: 'Some are light foot-soldiers, others are heavily armoured, and some are pavisiers [*clipeati*], who demand double pay because of their servants. In addition there are gun experts, but they are not as efficient in firing as the rest of the infantry [i.e. crossbowmen and archers]; they do best from behind the pavises at the start of battle or in sieges. We make it a rule that a fifth of the infantry are arquebusiers . . . We regard the heavy infantry as an immovable wall that, if necessary, would fight and die to the last man where they stood. When the opportunity presents itself the light infantry make forays, but, if their attack loses its impetus or if they are hard-pressed, they fall back behind the heavy infantry . . . All the infantry and arquebusiers are surrounded by *armati* and clipeati like a fortress. The pavises all round them give the impression of a fortress, behind which the light infantry shelter and fight as from behind castle walls, attacking when the time is right.' It has been suggested that the adoption by Hungarian infantry of such a defensive formation was in imitation of the fortified infantry centre fielded by the Ottoman Turks; however, the reverse is more probably true, since close-order infantry existed in Hungary long before the rise of the Ottomans. In addition, it was from Hungary that the Turks later copied the wagon-fortress (see above).

THE HUSSITES

The Hussite wagon-fortress of 'war-wagons' (*hradba vozova*), usually a rectangular formation, wherever possible drawn up on high ground, was the key to their battlefield success. An enemy approaching the fortress was met with a withering hail of crossbow, sling, handgun and cannon fire from the defenders, and

rarely managed to actually reach the line of wagons; if he did, he was likely to be unhorsed with grappling hooks and butchered by Hussite halberdiers, who defended the gaps between the wagons. A determined enemy might make several attempts at closing, as at Aussig, but eventually he would begin to fall back in disorder, which was the signal for the Hussite cavalry to emerge from either side of the wagon-fortress and sweep him from the field. In the first few battles of the Hussite wars their cavalry were admittedly few in number and mostly provided by those members of the Bohemian gentry sympathetic to their cause, but later troops of crossbow-armed scouts were raised, and eventually large enough bodies of cavalry existed to protect the army's flanks both in battle and on the march. In a prepared position the wagon-fortress might be surrounded by a ditch, and movable wooden mantlets would be placed between the wagons for added protection. For further details of the wagons themselves see figures 130 and 131.

Occasionally the wagons were apparently used in an offensive capacity, punching a hole through the royalist lines as, for example, at Kutna Hora in 1421, despite the fact that it is hard to understand how these heavy, slow-moving wagons could maintain enough momentum, or keep in close enough array, to break through and then escape from a larger army well supplied with cavalry. Clearly, however, it must have somehow been possible; all one can assume is that the point of attack was carefully selected (probably being defended only by infantry, and perhaps not many of them), and the attack was launched whilst the enemy was unprepared, perhaps during a meal. The guns mounted on many of their wagons doubtless provided an extra element of surprise. It is likely too that the enemy would not have been flexible enough to cope with such an unconventional tactical innovation. For launching such an attack, the Hussites drew up in a column with cavalry on the flanks and their infantry and baggage between 2 columns of war-wagons.

Although the Germans never learnt to keep their distance when confronted by a Hussite wagon-fortress, they did at least make some attempt at emulating their enemy's tactics, albeit unsuccessfully. Their first attempt was at Tachov in 1427, when an army led by Cardinal Henry of Winchester constructed a large number of Hussite-style wagons from information supplied by spies. However, this attempt — and others like it — came to grief when, on the morning of the proposed battle, the royalist commanders found that many of their men had fled in panic 'on those wagons that should have been used to construct a wagenburg, such as had been planned and ordered; and so many had left and the army had become so small that the advice was given that no attempt ought to be made to engage the enemy without a wagenburg.' Predictably, many Germans were killed in the ensuing rout.

POLAND

In the 14th century the most common Polish battle-array was *en haye*, i.e. in a line or a number of successive lines, with men-at-arms to the fore, usually 4-deep, and the strzelcy drawn up behind them. However, this proved too inflexible when fighting against a mobile, lightly-armoured enemy such as the Tartars or Lithuanians, so a new type of horned formation was subsequently adopted, with heavy cavalry in the centre and light cavalry (usually Lithuanians after the union of the two countries) on the wings, somewhat in advance of the centre. Wings and centre were all now comprised of a number of individual 'banners' (see notes on organisation) with gaps between them, thereby introducing much greater flexibility than had been possible when drawn up en haye, and enabling individual elements of the army to turn and face a new threat from any angle without disorganising their array. Each banner drew up with men-at-arms on the outside and strzelcy in the centre.

In battle the leading banners of heavy cavalry would charge the enemy centre, those following then deploying to attack his wings. The light cavalry forming the Polish wings would then encircle the enemy on one or both sides and fall on his camp and the rear of his battle-line. As mentioned below, if the Lithuanian light cavalry themselves tried to attack heavy cavalry they almost invariably came off the worse. This likelihood inevitably tempted the enemy to launch his own main attack at one of the Polish wings, which would gradually give way under his onslaught and then break in flight (feigned or otherwise). However, by this time the Poles' own centre of heavy cavalry would have wheeled to counter the flank attack, and while it and the seemingly victorious enemy squared up to resume the fight the light cavalry would 'rally' and fall on the latter's flank and rear, often cutting off his escape in the process. A variant of this tactic was employed at Tannenberg, where their Lithuanian light horse were drawn up only on the right flank, the left being protected instead by a forest and marshland.

Infantry where present tended to be drawn up to the rear of the heavy cavalry in the centre of the battle-array, from where they could launch themselves into the cavalry melee should the need arise. In this role they would concentrate principally on bringing down the enemy's horses. They were also in a good position to protect the rear of their own heavy cavalry from any attempt at encirclement by the enemy.

LITHUANIA

At the beginning of this period Lithuania was one-quarter comprised of marshland and lakes and three-quarters of forest, so it is hardly surprising that its troops were predominantly light rather than heavy cavalry, who concentrated on skirmishing and ambushes. In the 13th century at least they appear to have often dismounted to fight in wooded terrain (the 'Livonian Rhymed Chronicle' actually says it was customary), but this practice had seemingly died out by the early part of this period, except where they fought from behind specially constructed barricades of felled trees and undergrowth somewhat akin to those utilised in similar terrain by the Irish (see volume 1, page 51). In more formal battle-array the Lithuanians drew up in 3 lines square-on to the enemy, with the armoured and better-mounted men positioned either to the front or in the middle of each squadron; the squadrons comprising each line fought in close order, but with some distance between individual squadrons. For all their lightness, arrayed thus they were prepared to take on even conventional Western European heavy cavalry such as might be fielded by the Poles and the Teutonic Knights (seemingly concentrating on unhorsing them by bringing down their mounts with archery and long lances), though admittedly they were seldom successful against them in the open field. Under certain circumstances they resorted to feigning flight; the Lithuanian retreat at Tannenberg in 1410, for instance, is claimed by some sources as a feigned flight, though others — such as the 'Chronik des Landes Preussens', which says the Lithuanians were 'knocked off their feet' — report it as a rout. (Either way it resulted in some degree of unnecessary panic in the Polish ranks, Dlugosz reporting that the Bohemians among them fled back to the forest behind their position.) By the end of the 14th century some artillery might also be fielded, occasionally in conjunction with wagons as at Worskla in 1399.

Under pressure Lithuanians would withdraw into their neighbourhood fortresses, in which garrisons were generally maintained by relays of recruits. Hard fighters at all times, it was in defence of these fortresses that the Lithuanians were at their most desperate, often fighting to the last man. It is recorded how at Pilene in 1336, after German crusaders had set fire to the wooden walls of the fortress, the Lithuanian defenders killed their families and then themselves — some 4,000 souls in all — rather than suffer the humiliation of capture. Other, similar incidents are also on record.

THE TEUTONIC KNIGHTS

Although they still often fought against the Poles, warfare against the pagan Lithuanians predominated during this period. This largely took the form of frontier forays by both sides, which usually concentrated on the destruction or capture of a particular enemy fortress but nevertheless often ended up as little more than cattle-raids on a grand scale, large numbers of horses, cattle and prisoners generally being taken. Normally the Order launched up to 8 such raids a year and there were 2 main raids annually, these being the *winter-reysa* (of which there were often two, in December and January) and the *summer-reysa;* whereas the former generally comprised only 200-2,000 men, the latter was a large-scale affair involving a considerable portion of the Order's military strength. The Lithuanians preferred summer campaigns 'when the swamps hindered the Christian cavalry and the forests offered concealment', while the Teutonic Knights favoured winter raids for exactly the opposite reasons. Either way, because of the marshy nature of the frontier, weather conditions had to be just right: in the summer it needed to be hot and dry, otherwise floods could cut the army off; and in winter it had to be mild, but cold enough to freeze the marshes and rivers and harden the ground. Fighting in any other conditions was nigh impossible, and at best gave the advantage to the Lithuanians.

What pitched battles there were normally entailed the interception by one side of a raiding party sent out by the other. In such situations the Teutonic Knights would normally seek out a piece of flat, solid ground on which to deploy their heavy cavalry, since they fought in conventional Western European fashion (see volume 1); the importance of a clear, open field to their success is readily apparent from the 'Livonian Rhymed Chronicle'. Standard deployment in the 15th century was in 3 bodies of heavy cavalry (left and right wings, plus a centre which sometimes formed a reserve), with the infantry drawn up to the rear to provide a defence against rear attacks and to act as a defensive screen behind which the cavalry could reform if necessary. Artillery was normally positioned in front of the centre. This battle formation was used at Tannenberg in 1410, for instance, and more successfully by von Plettenberg at Lake Smolina in 1502. Although the Order had light cavalry of its own (largely natives) it appears to have made little use of them other than as scouts or as a second line to back up the men-at-arms.

RUSSIA

Like those of their Tartar enemies, Russian tactics were basically unchanged from those set out in *Armies of Feudal Europe,* though the *gulaigorod* featured considerably less, playing no part whatsoever in the major engagements of this era. Battlefield deployment mirrored that of the Tartars, with the army forming up in

5 divisions usually comprised of centre, left wing, right wing, advance guard and rearguard (or reserve); at Kulikovo the 5 main divisions instead consisted of vanguard, 'forward regiment', centre and wings, plus a reserve and a detached ambush unit concealed on one flank. (The 'forward regiment' was effectively an infantry screen intended to absorb the impact of the Tartar onslaught.) Wherever possible the battlefield itself would be carefully selected to provide security for the army's flanks and rear, Russian commanders therefore usually deploying with a river to their rear, resting the army's flanks on marshy ground or woodlands, in the latter of which an ambush party might be concealed. The front ranks or wings were generally comprised of light cavalry.

MAJOR BATTLES OF THE PERIOD

This is no more than a selection of the best-documented, better-known or most important battles of the period, many others having had to be excluded because so few details of them are available. Even the dates of many of the battles listed here are often disputed.

BAPHAEON, 27 July 1301

A Turkish force of 5,000 men under Othman defeated a smaller Byzantine army (2,000 men at the most) which had intercepted it near Nikomedia in Bithynia. The defeated Byzantines, commanded by the Hetaeriarch Mouzalon, managed to withdraw to the safety of Nikomedia's walls, their Alani heavy cavalry and Balkan Slav infantry covering their retreat. Pachymeres' description of this battle is the very first contemporary reference to Othman.

SHAQHAB, 20-22 April 1303

Kutlugh Shah, leading an Ilkhanid invasion of Syria with 50,000 men, including contingents of Georgians and Cilician Armenians, was defeated by the Mamluks under Sultan an-Nasir Mohammed, whose forces included Bedouins on the right flank and probably Turcomans on the left.

On the first day Kutlugh himself led an attack with 10,000 men against the Mamluk right in which 6-8 amirs and 1,000 mamluks were killed. When the Mamluks reinforced their right from the centre and left the main Mongol attack shifted to the consequently weakened centre, from which the Burjiya regiment nevertheless repulsed them. The right flank had meanwhile broken under continuing Mongol pressure from Kutlugh and most of its units had fled. However, Kutlugh himself only became aware that the Mamluk centre and left were still virtually intact when he withdrew to high ground to reform, and the other Mongol units now similarly pulled back, hostilities being brought to a close by nightfall. One of Kutlugh's tumans slipped away under cover of darkness, while some of the Mamluk fugitives rallied and returned to the battlefield.

Battle resumed the next day, and although the Mamluks lost many horses the Mongols were again obliged to fall back at noon, being overcome largely through thirst. The Mamluks, however, had a stream to their rear so had no shortage of water themselves, and when the Mongols attacked again on the morning of the third day their objective was now the capture of this stream. Advised of this, the Mamluks fell back and allowed the Mongols access to the stream, falling on them as they rushed for the water and 'harvesting their heads as men harvest barley with a sickle'. Kutlugh's army was scattered in rout, suffering up to 90% casualties, killed or captured, in the ensuing pursuit. One source refers to 10,000 prisoners being taken and another says 2,600 Mongols were killed in the battle. The Cilician Armenians too lost a great number of men, so many in fact that the Ilkhan Ghazan subsequently loaned them 1,000 Mongol cavalry plus the money to maintain 1,000 mercenary horsemen.

APROS, 10? July 1305

A Byzantine army comprised of Alani and Turkopole cavalry, Thracian and Macedonian cavalry and infantry, Asiatic troops, Wallachians and assorted other mercenaries, was defeated by the remnants of the Catalan Company. Muntaner quotes ridiculous figures for the strength of the Byzantines, but they probably totalled about 6,000 men. They drew up in 5 divisions, with the Emperor Michael IX commanding the reserve; Alani and Turkopoles were placed on the left flank, Thracian, Macedonian and Wallachian cavalry on the right under the Grand Hetaeriarch Doukas Nestougos, and infantry in the centre. The Catalans — 3,000 of them, with few cavalry — formed up in 4 divisions, Almughavar infantry forming the main body with heavy cavalry in reserve and Turkish cavalry on the wings.

The Byzantines opened the battle. The Alani and Turkopoles on their left fled after their attack met with fierce resistance from the Almughavars, thus exposing the left flank of their infantry, onto which the Almughavars immediately fell. Most of the rest of the Byzantine army then similarly fled, though their right wing held out for somewhat longer and was reinforced by Michael with the reserve. Nonetheless, in due course every Byzantine had fled except for Michael and about 100 cavalry, who charged into the thick of the Catalan centre. Michael was wounded in the ensuing melee but, rescued by his men, managed to escape.

Muntaner claims the Byzantines lost 10,000 cavalry (perhaps an exaggeration of 1,000) and an infinite number of infantry, compared to Catalan losses of 9 horsemen and 27 foot.

KEPHISSOS, 15 March 1311

Having concluded peace with his Byzantine enemies following a successful campaign in Thessaly, Duke Walter de Brienne of Athens wished to dispense with the services of the Catalan Company, which had been instrumental in his victory. Proud and arrogant, he dismissed them without pay, answering their reasonable demands for recompense with threats and curses. Understandably, the Catalans were not prepared to leave it at that, and events ultimately culminated in the decisive battle of Kephissos, or Almyra.

All too aware of the Catalans' capabilities, Duke Walter mustered a large army against them from all Frankish Greece; the sources differ regarding numbers, but probably there were 2,000-6,400 cavalry, including 700 knights, and some 4-8,000 largely Greek infantry (Muntaner's claim of 24,000 infantry can be dismissed). Encountering the Catalans on the banks of the Kephissos with their right flank on Lake Kopais, his cavalry were tricked into charging headlong into a carefully prepared marshy plain, where their horses became bogged down. The Catalans, who comprised 3,500 cavalry and 4,000 infantry (the former largely Turks, the latter largely of Almughavars but including some Byzantine prisoners pressed into service because they were good archers), then all but exterminated the Franks — so thoroughly that only a handful of noblemen are known to have escaped with their lives, Duke Walter not being among them. Infantry losses were similarly high — of the 24,000 present according to Muntaner, 20,000 were allegedly killed, which would imply that they suffered five-sixths casualties.

The Catalans' Turkish auxiliaries, under a certain Chalil, had at first refused to fight, suspecting that the battle might be merely a set-up to enable the Christians to kill them; they only joined in when they actually saw the Catalans start killing the Franks.

MANOLADA, 5 July 1316

Competing for control of the principality of Achaea, an Aragonese-Catalan force of cavalry and infantry under the Infante Ferdinand of Majorca was soundly defeated by the legitimate prince, Louis of Burgundy. Ferdinand had drawn up his inferior force in a pine forest, but Louis' troops set fire to the trees, thus forcing him out into the open.

Louis' army — three times the size of Ferdinand's, and comprised of French, Burgundian and Achaean men-at-arms and 2,000 Moreote Byzantines from Mistra — drew up in 2 lines, the first under John I, Comte de Cephalonia, the second (mainly of Burgundians) under Louis himself. Ferdinand broke through the first line with his 500 cavalry, but the death of his standard-bearer in combat with the second resulted in the flight of most of his forces, and he and the handful of loyal followers who stayed with him were overwhelmed, Ferdinand himself being unhorsed and killed.

MÜHLDORF, 22 September 1322

This battle was between Duke Ludwig of Upper Bavaria and Duke Frederick the Handsome of Austria, rivals for the German throne. Frederick's army was large and included Hungarian, Cuman and Bulgarian auxiliaries but was otherwise largely comprised of the nobility, whereas Ludwig's army was made up principally of city militias and troops supplied by the Elector of Treves and King John of Bohemia. Ludwig positioned 400 men-at-arms in ambush in a wooded valley under the Burgräf von Nuremberg, carrying Austrian flags so as to deceive the enemy.

Frederick's auxiliaries opened the battle, charging Ludwig's left (where King John's Bohemians were posted), which gave ground, as did the rest of the Bavarian line, Ludwig himself being rescued from near-capture by the bakers of Munich. When the Burgräf von Nuremburg's ambush was sprung, however, the tables were turned, the Austrians thinking they were reinforcements until it was too late to counter the threat. Virtually surrounded, many of the Austrians were captured, Frederick among them.

PELEKANON, 10 June 1329

This was an unimportant battle, of interest only in being the first engagement between the Ottomans and Byzantines since the defeat of the latter at Baphaeon. The Byzantines, under Emperor Andronikos III and the Grand Domestic (later Emperor) John Cantacuzene, numbered 2,000 regulars and an unknown number of hastily-mustered Thracian militia. The Ottomans, 8,000 men under Orkhan, were drawn up on high ground and would not be lured down onto the plain below, though Orkhan sent forward a detachment of 300 light cavalry to harass the Byzantines. After a day of desultory skirmishing, followed by two more determined Ottoman attacks which were both repulsed, the Byzantines were withdrawing to camp when the Turks, pressing hard on their rearguard, managed to wound Andronikos in the leg. Cantacuzene was unable to maintain order among the Byzantine troops during the night amid rumours that the Emperor's wound was mortal, and panic set in. Next morning, therefore, the Byzantines withdrew from the battlefield in 4 columns. The Ottomans were delayed in looting the abandoned camp site long enough for all but one of the columns to make good their escape, though the fourth suffered heavy losses outside Philokrene the next day.

VELBUZHD, 28 July 1330

An invading Bulgarian army under Tsar Michael Shishman, including Tartars, Moldavian Alani and Wallachians (the latter under Basarab), was defeated by the Serbians under King Stephen Urosh III and his son Stephen Dushan. The Bulgarians numbered 15,000 men, the Serbs probably somewhat less, but the Bulgarians, contemptuous of their adversaries, had dispersed in search of plunder and were caught by surprise while scattered. They broke in rout in the first attack, to be cut down by Serbian arrows as they fled, Tsar Michael himself being amongst those unhorsed and killed in the pursuit. Detachments of returning Bulgarian looters were annihilated piecemeal as they arrived on the field. A puppet tsar was subsequently placed on the Bulgarian throne by the victorious Serbs, but he was ousted only a few months later.

The sources differ on a number of aspects of this battle, not least regarding Dushan's involvement. Some say the battle resulted from his attacking the Bulgarian camp during a truce.

POSADA, 9-12 November 1330

Campaigning against the Wallachians, King Charles Robert of Hungary's army, including Cumans and Transylvanian troops under Voivode Tamás Széchényi, was trapped 'like fishes in a net' and defeated in ambushes in the mountain passes by Voivode Basarab's forces as it withdrew towards Transylvania, the final affray probably taking place at Lovistea in the valley of the River Olt. The 'Képes Krónika' describes the overall battle as follows: 'With his whole army he [Charles Robert] came to a defile where the road was shut in on either side by steep slopes; and ahead, where it broadened out, the way was blocked by strong barriers which the Wallachians had set up at many points. The king and all his men suspected nothing, and then from the top of the slopes on either side countless numbers of the Wallachians running back and forth hurled down missiles upon the king's army in the road below . . . The sides of the defile were so precipitous that it was impossible to climb them against the Wallachians, nor could they go forwards because of the barriers.'

Considerable numbers of Hungarians and Cumans were thereby killed or captured, and even Charles Robert himself was nearly killed, only being rescued from the swords of as many as 5 Wallachians by one of his bodyguard. Another knight with whom he had exchanged surcoats was indeed killed in mistake for him. This decisive victory secured Wallachia's independence from Hungary.

STRAWE, February 1348

A Lithuanian army which included contingents from as far away as Smolensk, Polotsk and Vitebsk, was defeated by the Teutonic Knights under their Grand Commander, Winrich von Kniprode, and Marshal. The former were prevented from making good their escape by the thawing of the River Strawe and suffered heavy casualties (allegedly 'thousands') as a consequence, including a brother of Grand Duke Algirdas. The Teutonic Knights' losses included 8 brethren and 42 of the many French and English crusaders who accompanied them.

WISBY, 27 July 1361

King Waldemar Atterdag of Denmark invaded Gotland with an army that included large numbers of German mercenaries, the defending Swedish forces by contrast being comprised of a peasant levy 'unarmed and unaccustomed to battle'. Judging from the archaeological finds, the Swedes, in antiquated armour, were laid low by a barrage of crossbow bolts followed by a bloody hand-to-hand melee. 1,800-2,000 were killed.

MARICA, 1365

There were two battles fought here, in 1365 and 1371 (see below), which are often confused, mediaeval accounts of them being largely impossible to separate since both engagements followed much the same course. However, at the first King Stephen Urosh V of Serbia and King Louis of Hungary led a 20,000-strong army of Hungarians, Serbians, Bosnians and Wallachians across the River Marica, intending to march on, and recapture, Adrianople from the Ottoman Turks. After an evening of feasting to celebrate their unopposed passage their camp was attacked at night by a smaller Ottoman army (about 10,000 men) under Haji-Ilbeki. The Christians panicked and fled, many drowning in the Marica in the darkness. That this virtually forgotten battle was a decisive Turkish victory is confirmed by the fact that Ottoman chroniclers called it *Serf Sindigi* — 'The Serbian Defeat'.

RUDAU, 17 February 1370

A large Lithuanian army, marching against Königsberg under the Grand Duke Algirdas' brother and co-ruler Duke Kenstutis, was defeated in Samland by the Teutonic Knights under Winrich von Kniprode, now the Order's Hochmeister. The Knights lost their Marshal (Henning Schindekopf) and as many as 26 commanders and 200 other brethren in this bloody battle, but they dispersed the Lithuanian forces, capturing the army's Grand Ducal standard in the process.

SAMAKOV, March? 1371

A force of Bulgarians under Tsar Ivan Alexander and Serbs under an unnamed *kral* was decisively beaten by the Ottoman Turks under Lala Shahin, beylerbey of Rumelia, on the plain of Samakov. The tsar was never seen again after the battle and was presumably killed. This defeat and that at Cernomen a short while later (see next entry) left Bulgaria wide open for Ottoman conquest and many of its major towns soon fell, though Sredets (Sofia) held out until 1385.

CERNOMEN (MARICA), 26 September 1371

Vukashin, king of Serbia, together with his son Marko and brothers Gojko and John Ugljesha, despot of Serres, had advanced towards Ottoman-held Adrianople in the hope of halting the Turkish advance into Serbian Macedonia, but by bad generalship they allowed themselves to be surprised by a dawn attack on their camp at Cernomen on the Marica, only a day's march west of the city, by an inferior Turkish force commanded by Lala Shahin. One contemporary Greek source and several later Ottoman sources claim that there were 60,000 Serbians, Greeks and Bulgarians in Vukashin's army, the Ottoman sources claiming that the Turks numbered only 4,000; however, the latter probably comprised at least 10,000 men, and it is improbable that the Serbian force was much larger. In the ensuing rout the Serbian army was decimated and most of its leaders killed (Vukashin was killed, possibly by a servant whilst fleeing, while Gojko and John Ugljesha drowned). As a result of this battle the despotate of Serres and most of Bulgaria passed into Ottoman hands.

PIANA RIVER, 2 August 1377

A Nizhni-Novgorodian army of several thousand men, supported by Muscovite units from Vladimir and Murom, was attacked and utterly destroyed whilst encamped by Tartar forces under Khan Arab-Shah, few of the Russians having time to don their armour or find their weapons. Prince Ivan, the Russian leader, was drowned, and most of his army killed, when the Tartars attacked simultaneously from five different directions. The city of Nizhni-Novgorod was subsequently sacked.

VOZHA RIVER, 11 August 1378

A Tartar army marching towards Moscow was intercepted on the Vozha, a tributary of the Oka, by a Russian army under Grand Duke Dmitri of Moscow, the Okolnichi Timofei Veliaminov and Prince Vladimir of Pronsk. The Tartars crossed the river after midday, and the Russians succeeded in using their own tactics against them, enveloping both flanks with Dmitri in the centre and Vladimir and Veliaminov on either flank. The ensuing battle was fierce but short, the Tartars, commanded by Khan Mamai's lieutenant Murza Begich, being broken in rout and slaughtered along the riverbank. Many more drowned recrossing the river. Night having fallen, the Russian pursuit had to wait till morning, by which time the Tartar army had made good its escape, leaving a wreck of equipment and baggage in its wake. Even Marx had to admit that 'this was the first real engagement with the Mongols won by the Russians.'

KULIKOVO, 8 September 1380

For this decisive battle the Tartars fielded an army that included Polovtsy, Circassians, Alani, Burtas, Turks, Armenians, and even a body of Genoese infantry from Kaffa. Khan Mamai in fact claimed that he had with him 12 hordes, 3 kingdoms and 33 princes, totalling 703,000 men in all, but in reality his troops cannot have numbered more than 150,000. The Russians, on the other hand, allegedly numbered up to 450,000 (several sources say 200,000) but at the most probably totalled no more than 100,000; a ratio of 7 Tartars to 2 Russians is probably a fairly accurate assessment of the rivals' proportions. (Vernadsky, it should be noted, reckoned both armies at only about 30,000, with the Tartars possessing a numerical superiority in cavalry.)

The Russians, under Grand Duke Dmitri, drew up in 3 lines with their right on the River Nepryadva and their left on woods along the River Smolka, thereby preventing Tartar encirclement. Their first line consisted of the 'guard regiment' (all cavalry, under Semion Melik), the second line comprised the 'forward regiment' (mainly infantry, intended to absorb the impact of the Tartar charge), and the third and main line was made up of the 'right arm', 'grand regiment' (in which Dmitri himself fought as an ordinary trooper) and 'left arm', with in addition a reserve behind the grand regiment's left flank, and an ambush force of elite cavalry concealed in the woods on the army's extreme left flank under Prince Dmitri Bebrok of Volhynia and Prince Vladimir of Serpukhov. Since Grand Duke Dmitri was fighting in the ranks, command of the army was entrusted to an experienced boyar, Mikhail Brenk, who was killed in the battle. Meanwhile Mamai drew up his forces with a vanguard of light cavalry, centre of infantry, and both wings and a strong reserve made up entirely of cavalry.

In the first Tartar onslaught the Russian infantry of the 'forward regiment' 'like wood was broken, and like straw, mowed down'; however, they had fulfilled their prime tactical role in that the Tartars' initial attack, and thus their hope of a quick victory, was frustrated. The Tartar main body collided next with the Russian 'grand regiment' and right and left flanks, and a bloody melee of some 3 hours ensued. Their attack against the right flank was eventually repulsed, and here the Tartars subsequently refused to continue to fight in what they deemed unfavourable terrain, but the Russian left, after suffering grievous losses and with most of its commanders dead, was driven back by a concerted Tartar effort. At this the 'grand regiment' too began to waver, itself suffering heavy casualties (Dmitri himself being stunned by a mace blow after having 2 horses killed under him), and the reserve, attempting to prevent the Tartars from exploiting their advantage to fall on the rear of the 'grand regiment', was pinned down and decimated in turn as Mamai sent in his last reserves in the hope of thus securing the victory.

This was the precise moment the Russian cavalry concealed in the woods had been waiting for. They emerged from hiding and fell on the Tartar rear as it swept past, routing them utterly as the 'grand regiment' and 'left arm' rallied and counter-attacked, Mamai's own troop allegedly being the first to flee. Both sides lost about half of their forces in the battle, there perhaps being only 40,000 Russians left alive at the end of the day. Small wonder, therefore, that contemporary accounts refer to the battle as 'The Mamai Carnage'.

PLOCNIK, 1387

In this battle on the banks of the River Toplica, Prince Lazar of Serbia defeated an Ottoman army of 20,000 men under Kara Timurtash, beylerbey of Rumelia. All but 5,000 Turks were killed. This victory inspired an insurrection by Tsar Ivan Shishman against the Ottomans in Bulgaria which, however, was crushed in 1388 by another army of 30,000 Turks under Lala Shahin.

KOSSOVO POLE, 15 June 1389

The Serbian forces in this celebrated battle against the Turks probably comprised 15-25,000 men, including about 5,000 infantry and apparently some artillery, this army being composed of Bosnians (under Vlatko Vukovic), Albanians and others in addition to Serbians, under the overall command of Prince Lazar. They drew up facing south-east with their centre commanded by Lazar, their right wing under his son-in-law Vuk Brankovic, and their left wing primarily of Bosnians under Vukovic. Their cavalry were drawn up behind a screen of archers, and more infantry were to their rear. The Ottomans, probably numbering between 27-40,000 men, similarly drew up with archers to the fore, along with their other infantry, with a deep, stake-implanted ditch behind them covered with undergrowth (this on the Ottoman centre and left only), their cavalry forming the rear line. Sultan Murad himself commanded the centre, with his sons Bayezid, beylerbey of Rumelia, and Yaqub Celebija, beylerbey of Anatolia, on the right and left respectively (Doukas transposes their positions). In addition camels had been introduced into their battle-line to frighten the Serbian horses.

The battle began at daybreak and lasted 4 hours (i.e. up until 9 a.m.). It appears to have been opened by the Serbs with artillery and arrow fire, and the Ottomans replied in kind and then charged. Their first attack, executed by 2,000 archers, possibly supported by cavalry, was held and even driven back, particularly on the left where Brankovic's troops charged down from the vantage of higher ground. It was probably during the bloody melee that ensued that a certain Milos Kobilic, pretending to desert, penetrated to Murad's command post and stabbed the sultan to death. However, the Serbian advance, pushing back the Ottoman centre and left, had meanwhile foundered on the defensive ditch, where the Serbs suffered heavily from archery, and Bayezid, having assumed command, now counter-attacked their centre, which wavered as the Turkish left, then their centre, rallied and with other stragglers returned to the fray. After further hard fighting the Ottoman superiority in numbers began to tell, and Serbian resistance began to collapse. According to legend Brankovic's right wing (allegedly, but highly improbably, comprised of 12,000 men) either deserted or broke in rout, but actually it withdrew only when its position had become untenable. One 15th century source says that it was in fact a certain Dragosav Probic who deserted, going over to the Turks, upon hearing of which Vukovic and the Bosnians fled. Either way, other units began to follow suit and the whole Serbian line disintegrated.

Losses on both sides had been heavy, and it was such a Pyrrhic victory for the Turks that for a while the battle was celebrated in Western Europe as a Serbian success. Philippe de Mézières wrote that each side suffered 20,000 casualties, while a Florentine chronicle says 30,000 Serbs and 50,000 Turks died in the battle. Prince Lazar and many other Serbian leaders were captured and executed, while on the Ottoman side both Murad and Yaqub Celebija had been killed, the latter by Bayezid himself as soon as he heard of his father's death in order to remove a potential rival for the throne.

SHAQHAB, 2 January 1390

During one of the interminable civil wars of Egypt, a royal army under Sultan al-Mansur and his commander-in-chief Mintash was defeated by the army of the deposed sultan al-Zahir Barquq. The royal army drew up in formal battle array with right and left flanks, centre, two wings and reserves for both left and right, while al-Zahir's smaller force was 'not as elaborately disposed' because of its numerical inferiority. Mintash stationed himself on al-Mansur's right flank while al-Zahir positioned himself in the centre. The battle opened with charges by the right flanks of both armies, but after a series of melees al-Zahir's left and right were both defeated and pursued from the field. However, most of his centre stood firm (though Taghribirdi says there were only 30 of his mamluks, 'the remainder of the Turcomans and the rabble, numbering something more than 200 men'), and as 'the dust of battle cleared away' he found al-Mansur's centre still stationary before him and, in a decisive charge, swept it away and broke through to the royal camp, capturing al-Mansur in the process. Large numbers were killed on both sides, and Mintash actually went on to Damascus, thinking he had won and totally ignorant of the fate of the sultan.

KONDURCHA RIVER, 18 June 1391

Having invaded Transoxiana, Tokhtamysh Khan of the Golden Horde was confronted by an inferior army under Tamerlane. Tokhtamysh's army included Volga Bulgars, Circassians ('mountaineers of the Caucasus'), Bashkirs and Russians, and when drawn up it overlapped both ends of Tamerlane's battle-line. Even so, the latter is claimed to have comprised 200,000 men, drawn up in 7 divisions, with the vanguard of 10,000 under Sultan Mahmud Khan and the second, and largest, division commanded by Tamerlane himself, while 2 divisions were held in reserve.

Tamerlane's first attack was against the Golden Horde army's left, which attempted to envelop it but was beaten back by 2 or 3 of his other divisions. A general melee ensued all along the line, with Tamerlane gaining an early advantage both on the right and in the centre, Tokhtamysh therefore concentrated on the Timurid left and, in a furious onslaught, broke through, detaching it from the rest of the army and reforming in Tamerlane's rear. However, at this decisive moment confusion suddenly seized Tokhtamysh's men because his standard-bearer, by a secret arrangement with Tamerlane, lowered the khan's standard at which his men, thinking the khan dead, lost heart and fled. Casualties had been heavy, supposedly resulting in 100,000 dead on both sides.

TEREK RIVER, 22 April 1395

Abandoning his fortified camp on the banks of the Terek on hearing of Tamerlane's approach during a second campaign against him, Tokhtamysh Khan shadowed the Timurid army until, on 14 April, they finally encamped facing one another. On the 22nd Tamerlane arranged his forces for battle in 7 divisions, himself commanding the reserve of 27 binliks, and commenced his attack under the cover of showers of

arrows. Then, hearing of an advance against his left wing, he led the reserve to its support and repelled the attack but pursued the enemy too far so that, thus disorganised, he in turn was repulsed and driven back. Disaster was averted by a mere 50 of his men who dismounted, knelt on one knee and laid down a withering barrage of arrows to hold back their pursuers while 3 Timurid officers and their men seized 3 of Tokhtamysh's wagons and drew them up as a barricade behind which Tamerlane managed to rally his reserve. The advance guard of his left wing had meanwhile broken through between the attacking enemy divisions, while his son Mohammed Sultan brought up strong reinforcements, positioning them on Tamerlane's left so that Tokhtamysh's advancing right wing was finally forced to take flight.

The Timurid right wing having meanwhile been surrounded, its commander ordered his men to dismount and crouch behind their shields, under the cover of which they were repeatedly attacked with lance and sword by Tokhtamysh's troops. They were finally rescued from these dire straits by the division under Jihansha Behadur which, attacking from both flanks, obliged the enemy left flank to fall back and then drove it from the field. Finally the centres of both armies joined battle, Tokhtamysh's giving way after a hard fight, upon which the khan and his noyons quit the field. The Timurid pursuit was close and bloody, most of those they captured being hanged.

ROVINE, 17 May 1395

In this battle on the River Arges about 10,000 Wallachians and Bulgarians under Mircea the Old, voivode of Wallachia, defeated an Ottoman army under Sultan Bayezid comprised of 40,000 Turks and 8,000 Serbians and other Balkan auxiliaries. The leaders of the latter contingents, Konstantin Dejanovic of Kjustendil (who had also been in the Ottoman army during the Kossovo campaign) and Kraljevic ('King's son') Marko, son of the King Vukashin killed at Cernomen in 1371, both died in the battle. Mézières reported that about 30,000 Turks were killed as well as 'a great number of Christians', and indeed it proved such a Pyrrhic victory that Mircea was left paying tribute to the Ottomans at the end of it, so weakened were his forces.

NICOPOLIS, 25 September 1396

This was the battle that ended the ill-fated crusade, largely financed by the Duke of Burgundy, that had been organised in response to appeals for aid against the Ottoman Turks from the future emperor Sigismund, king of Hungary. Contemporary chroniclers claim that the combined Hungarian and crusader forces comprised 50-62,000 Hungarians (26,000 of them mercenaries), 10,000 Wallachians under Mircea the Old, 16,000 Transylvanians, 10-14,000 Frenchmen and Burgundians, 6,000 Germans, 1,000 Englishmen and 12-13,000 Poles, Bohemians and Italians. These figures, however, are fantastically high and can probably be largely discounted; in reality they may have totalled only 12-16,000 men (Schiltberger, an eye-witness, says 16,000, while Froissart puts the French crusader cavalry at no more than 700 men). Similarly, although another eye-witness (the author of the 'Religieux de Saint-Denis') reported the opposing Ottoman forces, commanded by Sultan Bayezid, as comprising a vanguard of 24,000, main battle of 30,000 and rearguard and household troops of 40,000, the Turks perhaps really numbered no more than 15-20,000 men, two Ottoman sources actually putting their own strength at just 10,000 men. Whereas the Christian forces were almost entirely cavalry, those of the Turks included a substantial number of infantry.

Marching to the relief of besieged Nicopolis, Bayezid chose a defensive position on a rise, straddling the road to the city with his flanks protected by ravines. His first line comprised irregular horse (i.e. akinjis, 8,000 of them according to Froissart), behind which infantry archers were drawn up in 2 large companies behind a line of stakes that was 16 feet deep. Behind these were his feudal cavalry, and behind these again, on his flanks, were two reserves, that on the left of Serbs under Stephen Lazarevic, that on the right being composed of the troops of the Porte under Bayezid himself, 'hidden in a certain copse to avoid detection' according to Doukas, the Religieux confirming that Bayezid's division was hidden behind a hill.

Sigismund's sound proposal that his own light troops should open the attack, to soften up the Ottomans for the decisive charge of the Western European heavy cavalry, was met with hostility by the haughty French and Burgundian crusaders, who regarded it as an insult to be put in what they deemed the rearguard position. Consequently, claiming that Sigismund wanted only to rob them of 'the honour of striking the first blow', they spurred ahead of their allies and approached the Ottoman position totally unsupported. As they came within range the Turkish light cavalry opened fire with their bows, then wheeled left and right (though not without casualties) to reveal the stakes and infantry archers, who outflanked the crusaders on both sides. These too now opened fire, upon which the crusaders charged uphill against them, negotiating the stakes with considerable losses, and many of them either dismounted or unhorsed, until they finally reached the Ottoman infantry, of whom they allegedly killed 10,000.

However, while thus disordered (as Bayezid had planned), the crusaders were counter-attacked by the Ottoman feudal cavalry. These too they managed to break through after a hard struggle in which 5,000 more Turks are claimed to have died, only to then be finally overwhelmed by Bayezid's 10-40,000 men, who came in on one end of their line. Most of the understandably biased Western chroniclers claim that Sigismund's Hungarians had fled by this time, but the eye-witness Schiltberger reports that a second battle now took place as the Hungarian and crusader main battle — although abandoned by its left flank (the Wallachians) and right flank (the Transylvanians) as it became apparent, from the riderless crusader horses stampeding past, that Bayezid was the victor up ahead — advanced in the wake of the French and Burgundians, cutting down the reformed Ottoman infantry, 12,000 in number, as they came. The feudal cavalry too were being pushed back when suddenly Bayezid's Serbian vassals emerged from ambush and overthrew Sigismund's banner, upon which the Hungarians broke and fled, to be pursued in rout to their ships anchored on the Danube.

In a battle that had lasted only 3 hours contemporaries estimated that the Christians had lost 8-100,000 men, the reality undoubtedly lying somewhere in between; Schiltberger says they lost 10,000. The Turks also suffered severe losses (Western contemporaries exaggeratedly claimed 6-30 were killed for every Christian), figures ranging from 16-60,000. Enraged by his heavy casualties, the next morning Bayezid executed the majority of his prisoners (300 according to Froissart, 3,000 according to the Religieux and 10,000 according to Schiltberger), the survivors being given to his army as slaves, except for a small handful of the very highest rank who were eventually ransomed.

DELHI, 17 December 1398

Invading India, Tamerlane was confronted by an army of 10-12,000 cavalry, 20-40,000 infantry and 120-125 elephants under Sultan Mahmud of Delhi. In order to neutralise the elephants Tamerlane took a number of precautions, distributing his infantry with caltrops to strew in their path and also constructing a defensive barrier comprised of a deep ditch with a wooden abattis at the bottom and a screen of hobbled buffaloes before it, 'fastened firmly together by the neck and feet with leather thongs.' In addition the Timurid archers were to concentrate their fire on the exposed mahouts. Mahmud meanwhile drew up with his elephants in the centre as was customary, accompanied or crewed by rocket- and grenade-throwers, both armies otherwise adopting the traditional Moslem battle array of left and right wings, advance guard and centre.

When the battle commenced the Timurids showered Mahmud's right with arrows, while an attack by the Indian left wing and vanguard against Tamerlane's right failed utterly when it was taken in flank and rear by the Timurid vanguard, losing 5-600 men in one charge and subsequently breaking in rout. The elephants had meanwhile advanced in good order, but many were neutralised by their mahouts being killed and others were actually captured, the rest being driven off 'like cows' with the rest of the army, which fell back to the city.* Delhi surrendered as a result of this defeat and was sacked soon after, apparently against Tamerlane's wishes.

WORSKLA, 5 August 1399

In an attempt to replace his ally Tokhtamysh Khan on the throne of the Golden Horde, Vytautus of Lithuania was defeated on the banks of the Worskla, a tributary of the Dnieper, by the khan's rival, Timur Kutluk. As well as Tokhtamysh and his Tartar forces Vytautus' army, commanded by 50 Lithuanian and Russian princes, included Lithuanians, West Russians, 400 Poles and 100 or 500 Teutonic Knights under the Castellan of Ragnit, plus wagons and some artillery. Vytautus had hoped to disperse Timur Kutluk's forces with his cannons, but they had only a minimal effect on the fast-moving Tartar cavalry, whose movements were largely hidden anyway by clouds of dust raised by their horses' hooves. Nevertheless, after a fierce fight of several hours' duration that began soon after midday, the Lithuanians were close to victory over the main Tartar body, commanded by the future khan Egidei, until the Tartar reserve under Timur Kutluk himself suddenly came in on their rear. The Lithuanian artillery was immediately overrun, their camp captured and their cavalry thrown into a whirl of confusion that soon degenerated into a rout. Tokhtamysh was among the first to flee, the rest of the Lithuanian army soon following suit.

Vytautus escaped, but two-thirds of his army was left dead on the field, 74 princes plus voivodes and nobles without number being among them, including Dmitri of Bryansk and Andrei of Pskov who had been

*Schiltberger and Clavijo both claim (rather improbably) that Tamerlane defeated the elephants by loading wood or straw on the backs of his pack-camels, setting fire to it, and driving them towards the elephants, who took to flight. Tamerlane's own account, and those of his own chroniclers, make no mention of such an event.

prominent amongst the Russian commanders at Kulikovo. According to the 'Chronicle of Novgorod', which reports that this was 'such a fierce battle as there had never been before between the Lithuanians and Tartars', the Tartar pursuit took Timur Kutluk as far as Kiev.

DAMASCUS, 1 January 1401

This time invading Syria, Tamerlane was confronted before Damascus by an army of 40,000 Mamluks under Sultan al-Nasir Faruj. The Mamluk left was routed, but their right was able to repulse a determined attack led by Tamerlane himself, forcing the Timurids back to their camp where, finally, sheer weight of numbers prevailed against the Mamluks who, 'overwhelmed by so great a number, were unable to offer resistance and were forced to retreat'. Pursued back to their own camp in turn they lost many dead and captured, as too did the Timurids. The battle therefore ended in a draw with both sides still holding their original positions. However, only about 10 days later the Mamluk army, racked by internal unrest and abandoned by the sultan and his leading amirs (in all 3,000 men who, fearful of a coup taking place in their rear, had returned post-haste to Cairo), dispersed in disarray, abandoning Damascus to be sacked by Tamerlane.

ANKARA, 28 July 1402

For his inevitable confrontation with Tamerlane, whose forces probably numbered at the most about 80,000 men plus 26 or 32 elephants, the Ottomans under Bayezid allegedly mustered 120-150,000 or more men, including some Black Tartars, and 5,000 Serbs according to Doukas. Bayezid had orginally taken up position on high ground near Ankara, but Tamerlane, hearing of this, left the road on which he had been marching and took off cross-country, with the Ottomans, who thought he was in flight, abandoning their camp and marching after him. After leading the Turks on an 8-day goose-chase Tamerlane arrived back on the plain before Ankara and plundered the undefended Ottoman camp, then drew up for battle with one flank on a river that ran behind his position and the other on a fortified height (i.e. the original Ottoman position). The Ottomans themselves, tired from their march (during which they had lost perhaps 5,000 men through thirst), were now obliged to do battle without first having a chance to rest. They drew up with Rumelians on the left, Anatolians on the right, Janissaries and 'azabs in the centre, with Tartar and Serb cavalry behind the left and right wings respectively, the household cavalry behind the Janissaries, and more sipahis in reserve.

The Ottomans advanced in a crescent formation at 10.00 a.m. to a great noise of drums and cymbals while the Timurids awaited their onset in silence. On the right, led by Bayezid's son Suleiman, the Ottoman attack was met by a concentrated barrage of arrows and naptha (Tamerlane's front line reputedly throwing balls of Greek Fire amongst the archers covering the Turkish advance), and the Timurid right wing charged the disordered Ottomans. As Bayezid's own right wing, comprised largely of recently subjugated Anatolian amirates, gave ground (many of the Anatolian Turcomans deserting to Tamerlane — Doukas specifically mentions the troops of Aydin, Saruhan, Menteshe and Germiyan), the Timurid left counter-attacked in 3 waves, breaking through the Turkish skirmishers and overwhelming their cavalry, who they pursued out of sight. Tamerlane now despatched the elite Samarkand division and a unit of his own guards to take advantage of this breakthrough, and these made contact with the Serbs, who were eventually obliged to withdraw, which left only Bayezid's infantry centre still intact, against which Tamerlane now advanced with his own centre, comprised of his elephants and 80 regiments (binliks?). The Ottoman centre was swiftly overwhelmed, those infantry and sipahis who stood their ground being killed or captured. Bayezid himself made a stand with 1,000 horsemen according to Schiltberger (or 10,000 Janissaries according to Doukas), until these too were cut down, upon which he attempted to flee, only to be captured. Monstrelet and the Dominican Friar both agree that the Turks lost 40,000 men, while the Timurids are said to have lost 10,000. Bayezid never regained his freedom, dying only a few months later.

TANNENBERG (GRUNWALD), 15 July 1410

Contemporary sources claim that 16-83,000 Teutonic Knights and 26-163,000 Poles and Lithuanians were involved in this battle, but modern estimates put their strengths more credibly at 21,000 cavalry and 11,000 infantry for the Teutonic Knights, and 18-29,000 Polish cavalry, 4,000 Polish infantry, 11,000 Lithuanian cavalry, 1,000-1,500 Crim Tartar cavalry, plus some Wallachian and Serbian cavalry and a few Lithuanian infantry, and artillery on both sides. Traditionally the Teutonic Knights were organised in 52 'banners' and the Poles and Lithuanians in 50 and 40 'banners' respectively (the Poles forming the left and the Lithuanians the right of their battle-line). The Polish-Lithuanian commander-in-chief was technically King Vladislav II, but it was his brother, Grand Duke Vytautus, who effectively took control. The Knights were commanded by their Hochmeister, Ulrich von Jungingen.

The battle commenced at 9.00 a.m. After initial skirmishing between the opposing light cavalry the Knights' artillery opened fire, goading the Lithuanians into a wild charge which, met by a counter-charge of 15 banners under Friedrich Wallenrod, Grand Marshal of Prussia, was rolled back after a fierce engagement and then broken in rout. Only the 3 Smolensk banners withdrew in good order to join up with the Poles, though they were pursued so closely by 7 of Wallenrod's units, who intended to take the Poles in flank, that one was cut down almost to a man.

By this time battle had also been joined in the centre and on the left, with the Poles under pressure both to their front (from 20 divisions of Knights under Konrad von Lichtenstein, the Grand Commander) and on their right, exposed by the Lithuanian rout. However, the Smolensk banners had delayed Wallenrod long enough for the Poles to ready themselves for his attack. Nevertheless, pressure on this flank steadily increased as one by one Wallenrod's other 8 divisions rallied from their pursuit of the Lithuanians and added fresh impetus to the attack. Eventually, when a fierce melee for the Polish royal banner ended in favour of the Poles, the psychological advantage shifted, and the Hochmeister had to commit his reserve of 16 banners (plus his own) in order to try and retrieve the situation. At much the same time the Polish infantry came in on the Knights' right flank and began to inflict considerable slaughter amongst the crowded, immobilised horsemen, and soon afterwards the Lithuanians, having rallied on the shores of Lake Lubicz, charged in on the Order's rear, so that the Knights were all but encircled, other Lithuanians meanwhile sacking the Order's camp and slaughtering its infantry. The battle then degenerated into a massacre as the numerical superiority of the Polish-Lithuanian forces finally took effect on the trapped Knights, organised resistance collapsing on the death of the Hochmeister, ending an engagement that had lasted some 10 hours.

The Teutonic Knights recorded their own losses in the battle as 18,000 dead, while the Poles claimed to have captured up to 14-16,000 more, probably including many non-combatants. At least 205, and probably 400, brethren were amongst the dead, Sienkiewicz writing that of 700 'white-cloaks' only 15 were taken alive. Their losses included virtually the entire high command of the Order, the Hochmeister, Grand Commander, Marshal and Treasurer all being killed. Modern estimates put the Polish-Lithuanian losses at 4-5,000 dead and 8,000 wounded. The Poles, however, failed to take advantage of the magnitude of the Order's defeat: 'No-one', as one modern authority states, 'ever wasted such a great victory so completely.'

CAMURLU, 5 July 1413

In a war between Bayezid's sons for the succession to the Ottoman throne, Mehmed was attacked in Serbia by his younger brother Musa. Mehmed's army comprised 15,000 men, including Byzantine and Serbian contingents, and despite the fact that Musa's must have been larger it was he who was defeated. Doukas says simply that 'when the two armies came to blows, Musa's troops were defeated and deserted en masse to Mehmed, who warmly welcomed them.' He says in addition that Musa lost an arm in the battle and died through loss of blood, but in fact he was captured several days later and strangled, leaving Mehmed as undisputed sultan.

NEKMER, December 1419

300 Hussites from Pilsen under Jan Zizka were attacked by 2,000 royalists whilst besieging the castle of Nekmer. The Hussites' use of cannons mounted on 7 wagons enabled them to repel the royalist forces with considerable losses and make good their own escape.

SUDOMER, 25 March 1420

Withdrawing from Pilsen under a flag of truce, a force of 400 Hussites and 12 wagons under Zizka was attacked by 2 columns of royalist cavalry totalling 2,000 men. Zizka drew up with one flank resting on a pond and the other protected by the wagons. The royalists dismounted and attacked on foot, fighting continuing until nightfall when they finally withdrew. Both sides had suffered heavy casualties and 3 of Zizka's wagons had been damaged.

VYSEHRAD, 1 November 1420

Some 12,000 Hussite besiegers (principally Orebites and Praguers, with a contingent of Taborites), commanded by Hynek Krusina, were attacked head-on by about 18,000 royalists under Sigismund (now king of Germany and Bohemia as well as Hungary) who were bloodily repulsed, partly as a result of the desertion of 1,500 cavalry under Nicholas of Jemniste, mint master of Kutna Hora. The royalists' Moravian contingent (2,000 men under Henry of Plumlov) suffered particularly since they had tried to dissuade Sigismund from this suicidal attack and, being suspected of cowardice as a result, had been sent against the Hussites' strongest

point. In all, however, only 500 royalists were killed, though many more were captured. Their dead included the Bohemian royalist Peter of Sternberk, whose attack upon Bohemian pilgrims at Sezimovo Usti had led to the outbreak of open war with the Hussites in November 1419. As a result of this victory the fortress of Vysehrad was surrendered to the Hussites, who promptly dismantled its defences.

KUTNA HORA, 21 December 1421

In this anti-Hussite crusade the city of Kutna Hora was King Sigismund's objective, being the key to control of eastern Bohemia. His army appears to have contained a particularly large Hungarian contingent (15,000 men, mostly cavalry, commanded by the Florentine condottiere Filippo Scolari, usually called Pipo Spano), also including Silesians, Lusatians and Austrians. In all the royalist army allegedly totalled 50-60,000 men, and certainly it outnumbered the Hussites by 3 or 4 to 1 by the time of the battle, the latter being only 10-12,000 strong under Zizka. In fact as Sigismund's army spread out before Zizka's wagon-fortress (which had drawn up with the town to its back, after marching out of Kutna Hora oblivious to an anti-Hussite conspiracy brewing there), the king's forces actually filled out some gaps in their front with cattle in order to make their numbers seem even greater.

Pipo's cavalry made repeated frontal attacks against Zizka's positions throughout the day in order to keep the Hussites continually occupied, always falling back as they came within range of the Hussite guns but, according to one source, nevertheless suffering heavy losses from these. However, as the early dusk of this shortest day fell, Pipo despatched a body of cavalry round Zizka's right flank to the Kolin Gate of Kutna Hora which, at a pre-arranged signal, was thrown open to them by the militia detachment that was supposed to defend it. A general rising ensued within the town; all adherents of Zizka's cause were massacred, and in the darkness the royalist right flank was now extended down to the Kourim Gate at the opposite end of the city, leaving the Hussite army before Kutna Hora surrounded and completely isolated as night fell.

Zizka managed to extricate himself from this dangerous situation by attacking Sigismund's headquarters early the next morning, using his wagon-mounted guns to punch a hole through the royalist lines, thereby enabling him to escape with his entire wagon-fortress.

NEBOVIDY, 6 January 1422

Zizka then spent 2 weeks raising additional forces while Sigismund, who assumed the Hussites would go into winter quarters, dispersed and billeted his troops in villages round Kutna Hora, Caslav and Nebovidy. It was against the large body of several thousand Hungarians posted in Nebovidy that Zizka launched his unexpected counter-attack. The Hungarians were unable to form up their line of battle in time to meet the Hussite attack and were quickly routed, despite some stiff fighting.

HABRY and NEMECKY BROD, 8 and 10 January 1422

Sigismund and Pipo Spano managed to pull together enough of their scattered detachments to put up some resistance to the Hussites 2 days later on a hill near the small town of Habry, but again their Hungarian troops were routed, and although most of the cavalry appear to have escaped, 12,000 men or at least 2-4,000 were killed. In addition 548 heavy cavalry were allegedly drowned attempting to cross the ice of the Sazava River, which broke under them, and another 1,500 or 2,000 Germans, Hungarians, Moravians and Poles were killed in the Hussite siege and sack of Nemecky Brod ('Deustschbrod' as the Germans called it) over the next 2 days, where in addition many guns and 500 wagons full of provisions were captured by the Hussites. All in all, therefore, this short campaign had proved an unmitigated disaster for Sigismund.

HORICE, 20 April 1423

A royalist army under Cenek of Wartenberg, comprised mainly of feudal cavalry but including some battle-wagons and guns, was soundly defeated by Jan Zizka with a considerably smaller Orebite Hussite force (perhaps some 120 wagons and 2,400-3,000 men). Zizka drew up his wagon-fortress on a hill too steep for cavalry charges so that Cenek's forces had to attack dismounted, to be repeatedly repulsed by Hussite fire until eventually Zizka counter-attacked and put them to flight.

MALESOV, 7 June 1424

Pursued by a Praguer army, Zizka drew up his Orebite forces on high ground overlooking the road along which the Praguers would have to approach, positioning his wagons to the fore 'wheel to wheel' with a number of his supply wagons in the centre of the line, between the cavalry, loaded up with stones. When

half the Praguer army had crossed the valley below, Zizka ordered his cavalry to advance, and the infantry to roll forward the stone-laden supply wagons. Just as the Praguers were advancing to make contact the wagons were released, hurtling downhill and crashing through their centre. Zizka's artillery then opened fire to add to the confusion, the Orebites following up with a downhill charge that swept the disorganised Praguers from the field. The Orebites lost only 200 men in this battle, as against some 1,200 or 1,400 Praguers.

AUSSIG (USTI NAD LABEM), 16 June 1426

Besieging Usti, a combined Hussite army of some 24,000 men was attacked by a royalist relief force that was probably somewhat smaller, perhaps numbering only 20,000 at the very most, composed chiefly of Saxons, Thuringians and Silesians commanded by Boso of Vitzthum. In addition the royalist army fielded 180 pieces of artillery. The Hussites were nominally under the overall command of Zygimantas Kaributas, regent of Bohemia, but Prokop the Bald commanded the Taborite faction.

The royalist cavalry charged, and in places even penetrated, the outer ring of wagons of the Hussite laager, drawn up atop a hill to the west of Usti, but they were then thrown back by volleys of fire from the Hussites' 'countless numbers' of guns, those that pressed on against the barricades being dragged from their horses by long hooks and butchered. While thus engaged frontally, the royalists were now attacked in flank by Hussite cavalry who had emerged from various points in the wagon-fortress, and after a brief melee they broke in rout. Elements of the royalist army were subsequently encircled and destroyed in the nearby villages of Hrvovice and Predlice, which may explain the figures of 10-15,000 royalist casualties claimed in some sources when likely losses in the actual battle probably numbered no more than 3-4,000. Contemporary Hussite accounts claim their own losses as just 30 men.

KHIROKITIA, 7 July 1426

This was the main battle fought against the Cypriots during the Mamluk invasion of Cyprus. The Mamluk forces, commanded by Taghribirdi al-Mahmudi and Inal al-Jakami, comprised 500-1,000 Royal Mamluks, 1,000 amirs' mamluks, 2,000 Turcomans and 600 Arabs, against which array King Janus mustered at the most 10,000 men, of whom up to 2,300 may have been cavalry (Makhairas gives Cypriot strength as 1,600 cavalry and 4,000 infantry). Amongst the Cypriot forces were a number of French, German and Savoyard crusaders and adventurers, and it was these who advised the king to march out against the Mamluks rather than fall back on Nicosia as the Cypriot nobles in the army had recommended.

Following a clash between the opposing scouting forces (that of the Cypriots being comprised of 300 horse and 'a great company of foot-soldiers', chiefly Hospitallers and Frenchmen), the Cypriot army drew up in close order to await the Mamluk attack. Makhairas reports of the king's position that 'all round him the ground was level, so he ordered the foot-soldiers to take their equipment and to stand each man close up to the next so as to be like a wall.' The king commanded the centre, while his brother Henry, prince of Galilee, commanded the right, and Sir Jean de Grinier and Sir Badin de Nores the left, 'and all the army [stood in array] like a wall.' At first only a handful of Mamluks arrived on the battlefield, in pursuit of the king's reconnaissance force. Taghribirdi wrote that they numbered only 70 men at the outset, not drawn up in any kind of order, so it is no surprise that a charge led by the king himself killed most of them and routed the rest. However, disaster now befell the Cypriots even as more Mamluks began to arrive on the field, for as the king's cavalry turned to fall back on their infantry panic seems to have suddenly seized the latter, who threw down their spears and shields and ran, and the cavalry apparently followed suit. If Monstrelet is to be believed the cause appears to have been the breaking of the girth-straps on the king's saddle (Janus was very fat), which unhorsed the king and led many to believe he had been killed. Makhairas states simply that the army routed 'because they were ignorant of warfare and were badly commanded.'

The Mamluks, perceiving the Cypriot rout, returned to the attack only with extreme caution, suspecting at first that it was all part of some devious ploy to tempt them into a trap, and though their hesitation enabled many of the Cypriots to escape they were still able to kill up to 2,000 on the battlefield (Monstrelet says 1,600-1,700), plus many more in the rout. The Prince of Galilee was among those killed, whilst the king was taken captive along with many of his nobility.

GOLUBAC, May 1428

Surprised by an Ottoman army that had force-marched to the relief of Golubac in Serbia, an Hungarian army of 25-30,000 men under King Sigismund, including Wallachians and Lithuanians, was utterly defeated. 200

Genoese and Lombard crossbowmen were able to cover Sigismund's own withdrawal to his galleys on the Danube, but 6,000 Wallachians and Silesians under the command of the celebrated Polish knight Zawisza Czarny of Garbów, separated from the rest of the routed army, were cut to pieces as they tried to defend a small rise. Czarny was amongst those killed, and many others were captured.

DOMAZLICE (TAUS), 14 August 1431

On the approach of Hussite forces in 3 divisions, a crusader army under Frederick of Brandenburg panicked and broke in rout, seemingly before a shot had been fired. This disaster apparently resulted from a breakdown of communications between Frederick and his fellow commanders, Frederick II of Saxony and Cardinal Cesarini, who interpreted the withdrawal of Brandenburg's baggage wagons to the rear in preparation for battle as premeditated flight. Cesarini rallied enough troops to attempt to set up a wagon-fortress to halt the Hussite pursuit, but they were quckly overwhelmed and mostly killed or captured, the dead including nearly all of the cardinal's own 200 men. Thereafter the Hussites were able to overtake and capture nearly all of the crusaders' baggage and war-wagons plus their artillery train.

NAKEL, 13 September 1431

An army of Livonian Teutonic Knights under the Vice-Marshal Werner von Nesselrode was attacked by Polish militia, led by 3 knights, while passing through woodlands near Dabki, west of Bromberg. They were 'dispersed hither and yon' in the forest, as a contemporary letter by the Hochmeister puts it, and as a result were easily defeated. A Polish account puts Livonian strength at 700 lances plus Kurland infantry (the latter comprised of poorly-equipped farmers according to another source), claiming that at least 400 lances were 'killed miserably', including 3 commanders. The Hochmeister's letter, however, clearly indicates that although there were indeed 'many' dead, a number of prisoners were taken (including Nesselrode and 7 more commanders), while 'some escaped, and more show up every day'.

LIPANY (CESKY BROD), 30 May 1434

This battle took place between two opposing Hussite factions, one comprised of the Bohemian League, of Utraquist noblemen and the Old Town of Prague, the other made up of the Taborites and Orphans under Prokop the Bald. The League forces, under Divis Bořek of Miletinek (an experienced commander who had fought under Zizka), numbered 25,000 men, while Prokop's army totalled 12-18,000, which included militias from 33 pro-Hussite cities and some contingents of gentry. Prokop, a Taborite, was in overall command, with Andrew of Kersky commanding the Taborite element and Capek of Sany (an Orphan) commanding the cavalry.

The League, with most of its artillery drawn up on its flanks, attacked first after an exchange of cannon fire but then fell back, Bořek having ordered his infantry to withdraw as quickly as they could in order to make the opposing Hussite forces think that his army was in full flight. At this Prokop's troops obligingly left their wagon-fortress in pursuit, only to have Bořek's cavalry fall on them from a concealed position, cutting through them and into their laager before they could regain its safety. Despairing of victory, Andrew of Kersky and Capek of Sany fled the field with the cavalry, and all resistance subsequently collapsed. Taborite and Orphan losses are (improbably) reported as 13,000, and large numbers of prisoners were also taken, of whom about 1,000 were herded into local barns and burnt to death. Prokop himself was amongst the dead, and this decisive defeat of his forces marked the effective end of the Hussite field-armies.

SWIENTA (WILKOMIERZ, PABAISKAS), 1 September 1435

This was the final engagement in a struggle between the rival grand dukes Svidrigiello and Zygimantas Kenstutis for control of Lithuania. Svidrigiello's army probably numbered about 30,000 men in all, composed of a cosmopolitan collection of Lithuanians, Hussite mercenaries, Russians from Kiev, Smolensk and Polotsk, Tartars, and Livonian Teutonic Knights (including their feudal vassals and Estonian and Latvian militia) under their Landmeister Franke Kersdorf. Its field-commander was probably Zygimantas Kaributas — the same as had once fought for the Hussites — since neither Svidrigiello nor Kersdorf would surrender command of their own forces to the other. Zygimanats Kenstutis' army, of much the same size, similarly represented a coalition of forces, but this time only of Lithuanians and Poles, the latter comprising either 800 or 8,000 cavalry under his son Michael and Jacob Kobylany. Both sides fielded artillery.

The opposing forces faced each other across the Swienta River for 2 days before signs of withdrawal by Svidrigiello encouraged Kenstutis to attack. A Polish contemporary described Kaributas' Hussite-inspired battle-formation as being drawn up 'in the manner of the Bohemian heretics with a wall of wagons. The

Tartars were posted on one wing [while] the crusaders and the Livonian master were on the other wing' in what he describes as 'a scattered formation', doubtless as a result of the attempted retreat that had encouraged Kenstutis' attack. Beyond them, we are told, lay Svidrigiello and his 'innumerable multitude of schismatics' (i.e., the Russians).

Kenstutis sent his Lithuanians against the latter, while the Poles tackled the Tartars, the wagons and the Germans. In the face of their onslaught the Tartars performed their usual feigned flight, but made the mistake of withdrawing inside the Hussite wagon-fortress, where not only did they present a wonderful massed target to the Polish artillery, but also hampered Kaributas' gunners as they tried to return their fire. The Poles then cut through Kersdorf's disordered troops and fell on the wagon-fortress, 'a bigger fortification than any ever seen in Bohemia, and strongly bound together'; they broke into it and completely overwhelmed the Tartars and Hussites in the cramped space within.

Svidrigiello and his 'schismatics' had in the meantime fled before Kenstutis' Lithuanians, but were closely pursued and likewise suffered heavy losses, including 13 princes killed and 12 captured. Among others killed in the battle were Kersdorf and 7 of his commanders, another source reporting that 'almost all the Livonian knights perished' (perhaps some 400, since that is the number of reinforcements subsequently requested from Prussia by the Livonian marshal). Zygimantas Kaributas was captured but, mortally wounded, died soon after.

HERMANSTADT, 22 March 1442

In this, his first pitched battle against the Ottomans (though he had skirmished with, and driven off, Isaak Bey of Smederevo's forces round Belgrade the previous year), Janos Hunyadi, voivode of Transylvania, defeated Mezid Bey's forces besieging Hermanstadt. The Ottomans lost allegedly 20,000 men compared to only 3,000 Hungarians, but in fact their whole army probably numbered no more than 16,000 men in all.

VASAQ, 2-6 September 1442

An 80,000-strong Ottoman army including Janissaries, under Sa'd ed-Din Pasha, beylerbey of Rumelia, invaded Transylvania to avenge the defeat of Mezid Bey. The Ottoman commander was obliged to split his forces by sending a contingent to subdue a revolt in Wallachia at the same time, upon which the main body was defeated in the Jalomita valley by 15,000 Hungarian 'peasants, townsmen and Szeklers' under Hunyadi, losing 20,000 killed and 5,000 captured, including Sa'd ed-Din himself and 200 standards. These two Transylvanian victories, at Hermanstadt and Vasaq, established Hunyadi's military reputation throughout Europe. A contemporary chronicler, Thuroczy, wrote jubilantly that 'no matter where, by whatever hidden paths, the Turks tried to enter the country [i.e., Hungary] in order to pillage it, as was their custom, their efforts were disastrous, because Voivode Janos and his soldiers who guarded the frontier defeated them every time.'

NISH (MORAVA), 3 November 1443

25,000 Hungarians, Poles, Serbs (8,000 cavalry and infantry), Germans and Wallachians, under Hunyadi, King Vladislav III of Poland and Cardinal Cesarini, defeated a numerically superior Ottoman army commanded by Kasim Bey, beylerbey of Rumelia, on the banks of the Morava. Partisan accounts claim that 30,000 Ottomans were killed, though a more reliable account says 2,000 or 6,000. In addition, 4,000 Turks, including 13 pashas as well as 9 standards, were captured. George Castriotes (Scanderbeg) was among the Ottoman commanders in this battle.

A month later, at Izladion on 12 December, a further contest took place. In Doukas' words: 'The Turks succeeded in crossing the rugged, mountainous terrain, and arrived opposite the Hungarian encampment, but they did not descend onto the plain because they were afraid. The Hungarians courageously ascended halfway up the mountain. The Turks poured down an endless shower of missiles but without effect. Finally, when both sides realised that they were making no headway whatsoever because of the ruggedness of the terrain, each returned whence it had come.'

TORVIOLLI, 29 June 1444

In this battle 15,000 Albanians under Scanderbeg managed to trap 25,000 Ottomans under Ali Pasha, mostly cavalry, in the narrow valley of Torviolli. The Albanian right was commanded by Tanush Thopia, the left by Mois Dibra, and the centre by Scanderbeg himself. In addition there was a reserve of 3,000 horse and foot, and another body of 3,000, under Scanderbeg's nephew Hamza, which was hidden in a forest with

orders to attack once the Turks were engaged in battle. The Albanian right was at first in danger of being defeated, but Hamza and the reserve attacked the Ottomans from both sides. Thus reinforced, Thopia held back the Turkish advance on the left, while Mois Dibra drove them back on the right and Scanderbeg routed them in the centre. The fight had lasted 3 hours, in which time at least 7,000 Turks had been killed and 500 captured (one source claims 22,000 and 2,000 respectively, plus 24 standards captured), for the loss of only 780 Albanian dead (or 120 in the alternative source) plus 2,000 wounded.

VARNA, 10 November 1444

Though nominally a crusade, this battle was effectively just another episode in the ongoing Turco-Hungarian wars that persisted throughout the 15th century. With their natural line of retreat cut by the Turks, the Christian army, comprised largely of Poles and Hungarians, under Hunyadi, King Vladislav III and Cardinal Cesarini, decided to give battle to the superior Ottoman forces. According to an eye-witness the Christians numbered barely 16,000 men (another source even says 12,000), plus 4,000 Wallachians and some artillery. They drew up with the king and his Polish bodyguard and gentry in the centre, with the Hungarians and French crusaders on the right and the Wallachians, under Vlad Dracul, on the left. In addition a wagon-fortress of 150 wagons was set up in the rear, and more Wallachians formed a mobile reserve. The Ottomans, commanded by Sultan Murad II, are said to have numbered 60,000 men, and may have fielded some artillery of their own.

At about 9 a.m., after both armies had faced each other unmoving for some 3 hours, the Ottoman skirmishers (6,000 akinjis and 'azabs) finally advanced and began a concerted attack, Anatolian feudal cavalry simultaneously attacking the Christian right wing while it was thus engaged frontally. But for a few hundred cavalry the Christian right was routed, though Vladislav and Hunyadi led a desperate counter-attack which drove back the Anatolians, killing 3,000 including their leader, the beylerbey Güvegü Karaca, upon whose death they broke. The Christian left wing, meanwhile, was being similarly hard-pressed by Rumelian feudal horse, but here too the tide of battle was changed by a counter-attack led by Hunyadi, who had switched his division back from the right flank while King Vladislav reoccupied the centre with his personal troops, 2 squadrons of heavy cavalry comprised of all the Poles and a few Hungarians.

Demoralised by the flight of the Anatolians, the Rumelians and akinjis too began to give way, only the Janissaries, behind a ditch and rampart in the centre, still holding firm. However, goaded by his Polish knights' jealousy of Hunyadi's exploits, Vladislav chose this moment to launch a rash attack against the Janissaries with his 500 cavalry (Piccolomini actually reckoned that there were 'scarcely' 300).

Although he met with initial success, once fully engaged in hand-to-hand combat his small force was surrounded by the Ottoman infantry, who concentrated on bringing down the Poles' horses. Vladislav himself was killed by a Janissary when his own horse was killed under him, his head then being chopped off and impaled on a spear to be displayed all over the battlefield, upon which the Christian army broke and fled, while the remaining Ottomans withdrew to their own camp in good order. The Christians had lost 10,000 men, Cesarini too being among them, while the Turks had lost somewhat more, sources claiming up to 30-40,000. Certainly Murad is supposed to have said after the battle, 'May Allah never grant me another such victory.'

KOSSOVO, 17-19 October 1448

This battle took place during an Hungarian invasion of Ottoman-held Serbia. The Hungarian army, commanded by Hunyadi, numbered between 24-40,000 men, most authorities settling on a figure at the lower end of this range. It included Bohemians, Germans, about 800 Poles and 8,000 (some say 10,000) Wallachians of suspect loyalty under their voivode, Vladislas II (one Roumanian authority mentions 3,000 Moldavian cavalry and 4,000 Wallachian archers). The Turkish army, under Murad II, was clearly larger — some say 4 or 5 times larger — and is put at 50-60,000 men by most of the Ottoman sources, including Janissaries and artillery.

Hunyadi drew up his army in 38 divisions, over-extending his line because of the numerical superiority of the Ottomans, who could otherwise have easily outflanked him. His centre comprised a wagon-fortress of allegedly 1,000 wagons manned by the infantry (notably 2,000 Bohemian and German handgunners) and Transylvanians, with his cavalry on the wings — Wallachians on the right, Hungarians under Janos Székely, Marshal of Hungary, on the left. The Ottomans too put their infantry in the centre, with the Janissaries and artillery 'surrounded by a trench, behind which were ranged the camels, and behind them again a belt of shields or bucklers fixed in the ground'. Anatolian and Rumelian feudal cavalry were positioned on the right and left flanks respectively. (Pears transposes the wings of both armies.)

The first day's fighting seems to have involved only skirmishing and no general engagement took place, but at noon of the second day battle began in earnest. While the opposing infantry exchanged fire in the centre of the line several cavalry clashes occurred on the wings, until the Ottoman attack was checked all along the line, the Hungarians proving to have a decisive advantage in firepower. Mistakenly thinking that the Turks would abandon their camp and withdraw under cover of darkness, Hunyadi next launched a night-attack, which was repulsed. The next day proved disastrous for the Hungarians — the Wallachians deserted to the Turks, and on the opposite flank Székely was defeated, obliging Hunyadi's troops to fall back on the wagon-fortress. Rightly sensing that all was now lost, Hunyadi withdrew 'in the dark hours of early dawn', leaving behind as his rearguard the German and Bohemian handgunners, who courageously held back the Ottoman pursuit the next morning by their defence of the wagon-fortress, until they were eventually overwhelmed. Hungarian losses totalled 8,000 according to a letter written by Sultan Murad, though other sources claim 13-17,000, these latter figures doubtless including the Wallachians, who according to Chalkokondyles were butchered by Murad, who suspected that their desertion was an Hungarian trick. The Turkish losses appear to have been higher, several authorities putting their dead at a quarter or a third of their total strength.

BERAT, 26 July 1455

An Albanian army of 14,000 men and artillery besieging Berat was surprised in its rear by an Ottoman relief force just as the garrison was about to surrender, the Ottoman army comprising 40,000 men led by Evrenos Bey. The Albanians lost about 5,000 men (one source says 4,560 men and 200 officers) including all but 200 of a contingent of either 1,000 or 1,700 Aragonese supplied by King Alfonso V of Naples. Only oncoming nightfall prevented the utter destruction of Scanderbeg's army. (Scanderbeg himself was not present, having led a foray out against a neighbouring fortress earlier in the day.)

BELGRADE, 22 July 1456

Opposing forces for this decisive victory over the Ottomans comprised on the Hungarian side a motley crowd of allegedly 60-75,000 crusaders, chiefly Germans, the majority armed with no more than swords, cudgels and slings, plus (or including) about 4,000, or according to one authority 10,000, well-armed troops provided by the banderia of Janos Hunyadi and his closest associates, all on foot because of a shortage of horses; and on the Ottoman side 60,000 cavalry and perhaps 20,000 infantry under Sultan Mehmed II, plus allegedly 200 ships, but probably in reality no more than about 60, on the Danube, and some 300 guns including 22 massive siege pieces and 7 mortars.

Contemporary sources give confused descriptions of this battle, but it seems that following the successful repulse of the Ottomans from Belgrade in a street-fight and a bloody battle around the city's defensive ditches during the previous night (in which both the beylerbey of Rumelia and the Aga of Janissaries were killed), some 2-6,000 unruly crusaders followed a Franciscan preacher, Giovanni da Capistrano, out beyond the defences. They marched straight for the Turkish gun positions and overran both lines (the Turks abandoning the guns, which were not ready to be fired), turning the captured guns on the Ottomans as they counter-attacked with 6,000 fresh cavalry late in the afternoon. A 5-hour battle ensued in which the guns were retaken three times, the Christians being driven right back to the very walls of Belgrade on one occasion, but it was eventually the Turks who fell back, Sultan Mehmed himself being wounded in the leg, and at nightfall they abandoned their guns and baggage and fled.

Some accounts make the attack on the Ottoman positions one of some 8,000 men led by Hunyadi, following — or in support of — an earlier unsuccessful assault by the crusaders, some saying that Capistrano called the crusaders back, thus preventing disaster, Capistrano himself writing that he called them back in order to put them in some kind of battle-order and then led them in the attack himself. Either way it is apparent that Hunyadi led an attack against the Turks at some point during the day. Turkish losses were high — a later source says over 13,000 were killed, while Capistrano claims 24,000 — their dead including the beylerbey of Anatolia and the khan of their Tartar auxiliaries. In addition they lost much if not all of their artillery, one eye-witness reporting that 13 guns, including one very large one, were captured (Hunyadi mentions 12 5-foot bombards and many catapults), though these figures probably refer only to those captured in serviceable condition, since we know that Mehmed had ordered the guns to be spiked. Lastly, many of the Ottoman galleys were captured and sunk or burnt, though some escaped; Hunyadi's account refers to 22 large galleys being captured.

ABULENA, 2 September 1457

An Ottoman army of 80,000 men (30,000 cavalry and 50,000 infantry according to Anti-Biemmi), commanded by Isa Bey, was resting on the Adriatic coast when it was surprised by an Albanian army of 17,000

men under Scanderbeg. The Albanians attacked in 3 divisions, one of 8,000 men under Scanderbeg, the others under Mois Dibra and 2 other captains. The Turks were scattered in all directions, losing 15,000 or 30,000 dead and 1,500 captured (another source, which claims 25,000 dead, gives the number of prisoners as 870). The captives included Scanderbeg's nephew Hamza Castriotes, who the Turks had appointed as ruler of Albania in opposition to him. 24 Turkish standards were also captured.

THE NIGHT OF TERROR, 16-17 June 1462

Encamped in the region of Targoviste while campaigning in Wallachia, a large Ottoman army under Sultan Mehmed II (150,000-strong according to Doukas) was attacked 3 hours after sunset, or at midnight according to Kritovoulos, by Wallachian forces led by Dracula (Voivode Vlad Tepes). Although an eye-witness in Dracula's army puts his forces at 24,000 men the attack seems to have been launched with only 'a portion of his troops', the commander of a second body, a boyar named Gales, who was to have attacked simultaneously from the opposite side of the camp, failing to support him. This may explain Kritovoulos' view that the Wallachian attack was 'disorderly'.

Chalkokondyles says that Dracula attacked with 7-10,000 men carrying torches and candles, their principal intention being to kill the sultan in his tent. However, in the darkness they had attacked the wrong portion of the camp and the tent against which they directed their attack was not the sultan's. Despite this setback they were able nevertheless to wreak considerable destruction before pulling out at about 4 a.m., Doukas adding that in the confusion many Turks killed each other. Chalkokondyles claims that the Ottomans then pursued the fleeing Wallachians and captured 2,000, though the Wallachian eye-witness says the Turks did not dare to pursue (which probably means that they did not dare to pursue in the darkness). Doukas confirms that they withdrew to Adrianople forthwith.

Kritovoulos, apparently humouring his patron, Sultan Mehmed, claims that the Wallachians succeeded only in slaughtering camels, horses and mules, and that the Turks had retreated in the face of their attack simply to lure them deep into the camp, upon which nearly all of them were killed or captured. That the true situation was quite different can be seen from the account of Konstantin Mihailovic, who was present in Mehmed's army. He confirms that despite the ditches with which the Ottoman camp was fortified, the Wallachians burst in and 'massacred horses, camels and several thousand Turks'. Doukas says 'countless numbers' were cut down, while Balbi, a Venetian envoy, actually puts the Ottoman casualties at 15,000, though he adds that the Wallachians themselves lost 5,000. The only reference Mihailovic makes to Wallachian casualties is the execution of 'several hundred' prisoners brought in the next day. Doukas states that the Ottoman army then withdrew to Adrianople 'in disgrace'.

KROYA, April 1467

To break an Ottoman siege of Kroya, Scanderbeg seized a strategic hill called Cruino that was the key to the ring of siege fortresses that the Turks had constructed round the city. In the ensuing battle the main Ottoman army of 80,000 men, commanded by Balban Pasha, was trapped between Scanderbeg's field-army and the garrison of 4,400 men under Tanush Thopia, and Balban was mortally wounded. The Turks, now leaderless, offered to surrender on condition that they would be allowed to withdraw to Ottoman-held territory, but, against Scanderbeg's will, the Albanians refused and resumed their attack. Despite suffering considerable losses, the Turks nevertheless managed to cut their way out.

TERCAN, 1 August 1473

Campaigning against the Aq-Qoyunlu (the White Sheep Turks), Sultan Mehmed's vanguard, composed of akinji and Rumelian troops under the beylerbey Murad Palaeologus and Mehmed Pasha, was defeated by Uzun Hasan whilst crossing the Euphrates in the vicinity of Tercan. The battle, which began with an archery duel and lasted over 3 hours, actually took place on sandbanks in the river, nearer to the Persian-held bank than to the Ottoman one so that whereas the Aq-Qoyunlu were easily able to reinforce their own troops the Ottomans could only reach the site of the battle in small numbers by a 'ford' stretching from sandbank to sandbank through deeper parts of the river. After a hard fight Murad was eventually drowned, upon which his troops fled and Mehmed Pasha, seeing this, withdrew to the river-bank, where he was apparently successful in holding back the Persian pursuit; other accounts, however, report that he had failed to support Murad's initial attack. All in all the Ottomans are claimed to have lost 4, 12 or 15,000 killed or drowned in this unusual battle, plus many more taken prisoner, while Aq-Qoyunlu losses are reckoned at 'not more than' 500. As a result of this defeat Sultan Mehmed began to withdraw northwards, pursued by Uzun Hasan.

OTLUK BELI, 12 August 1473

Uzun Hasan caught up with the Ottomans on the plain of Otluk Beli near Erzerum in central Anatolia. He detached a division of 10,000 men under one of his sons, Ughurlu Mohammed, to attack the Ottomans' fortified camp, drawing up the rest of his army in a crescent formation with infantry in the centre, which he commanded himself, and cavalry on the flanks. An 8-hour battle ensued which was finally decided by an attack against the Persian right flank by fresh Ottoman cavalry under Mehmed's second son, Mustafa, which drove the enemy flank back in disorder. The collapse of the Persian right, and the almost simultaneous defeat of their left by the future sultan Bayezid II, inevitably caused consternation amongst Uzun Hasan's infantry centre, to such an extent that, seeing himself hard-pressed from front and both flanks, Hasan fled the field. Zeynal, another of his sons, attempted to rally the deserted infantry but in due course he was killed and the remnants of the main Aq-Qoyunlu army broke in rout. Ughurlu Mohammed, who had meanwhile met with stiff resistance from the Ottoman camp, withdrew when he saw the rest of the army in flight and managed to cut his way through to the Persian camp, from whence Uzun Hasan and the other survivors pulled back beyond the Euphrates.

Other than by dint of hard fighting, the other principal cause put forward for the Ottomans' success on this occasion was their employment of a substantial amount of firearms. Though not referred to in contemporary Ottoman sources, several Italian accounts refer to Mehmed's use of artillery here, and later Ottoman chronicles confirm the decisive role it played in the battle, its heavy fire being responsible for the repulse of the first Persian attack, following which the battle had degenerated into a general melee.

Despite the decisiveness of their defeat, Aq-Qoyunlu losses were relatively light, apparently numbering only 4,000, or at the most 10,000, killed in the battle, plus some 3,000-3,700 taken captive — one source says 13,000 — of whom a large number were subsequently executed (these doubtless being the troops of those Turcoman amirs who were technically Ottoman vassals but had sided with Uzun Hasan; only a pressed contingent of Qara-Qoyunlu were spared, subsequently being released). In addition the Ottomans captured Uzun Hasan's standard, much booty and 1,000 horses, which would indicate that most of the dead were unsurprisingly foot-soldiers. One pro-Ottoman source puts Mehmed's losses at only 1,000 men, but he would appear to have actually lost more than the Persians, perhaps 14,000 men. An Armenian source says that a total of 20,000 men of both sides were killed in the battle.

VASLUI (RACOVA), 10 January 1475

Refusing to pay tribute to the Ottomans or to cede Cilia to them (captured from the Wallachians in 1465), Stephen the Great, voivode of Moldavia, confronted a large Ottoman army of perhaps 120,000 men and considerable artillery under Suleiman Pasha, defeating them 'on a foggy day, in a marshy place'. Stephen's own forces totalled 40,000 plus, or perhaps including, 5,000 Szeklers, 1,800 other Hungarians and 2,000 Poles, plus 20 cannons. He drew up in a narrow valley on the marshy flood-plain of the River Birlad, with Moldavian infantry and Szeklers in 2 lines behind defensive ditches with 10 guns on each flank; most of his cavalry he concealed in reserve in woods behind the left flank, sending just a small body of light cavalry out into the fog to lure the Turks on, which they succeeded in doing.

The Ottoman cavalry attacked the Moldavian centre while their infantry attacked the flanks. After stiff fighting the Moldavians fell back to the second defensive ditch, and only when that too looked as if it was about to break did Stephen launch his counter-attack, his heavy cavalry charging out against the Ottoman right flank preceded by 7 volleys from his 20 guns. Simultaneously buglers he had hidden at various points in the woods started blowing loudly on their trumpets, so that the Turks, unable to make out which direction the Moldavians were coming from in the fog, turned to face the buglers behind them, and were thus facing in the wrong direction when the Moldavian cavalry hit them. Before long the Turks had been utterly routed, losing 45,000 men according to optimistic Italian and Austrian sources, including 4 pashas, 100 standards and all their artillery. The Ottoman chronicler Sa'd ed-Din actually wrote that the majority of the Turkish army was killed, and another contemporary admitted that 'never had a Turkish army suffered such a defeat.' The Moldavian light cavalry pursuit lasted 3 days.

VALEA ALBA (RAZBOIENI), 26 July 1476

In the face of another Ottoman invasion of Moldavia, Stephen the Great prepared a defensive position in wooded terrain on the banks of a river, digging a deep ditch and building a redoubt of wood, earth 'and thorny bushes', strengthened with baggage wagons. He dismounted his whole army of 10-20,000 men behind this, 'and placing many large cannon and handguns [there] . . . he waited, thus fortified'. At first successful,

the Moldavians repulsed the Ottoman cavalry vanguard under Suleiman Pasha, but the arrival on the field next day of the main Turkish army under Sultan Mehmed himself turned the tide. The renewed Ottoman attack began with an exchange of archery and artillery fire, followed by repeated attacks of horse and foot. Finally, just when they were beginning to waver, Mehmed rallied the Turks and led them back to the attack himself, so that by evening the Moldavians had been so heavily defeated that the battle was subsequently named *Valea Alba*, 'The White Valley', after the vast number of their bones to be seen bleaching there. As night fell Stephen extricated the remnants of his army under the cover of a counter-attack by his curteni and viteji. Contemporaries attributed the Moldavian defeat at least in part to the ineffectiveness of Stephen's artillery.

ADANA, 17 August 1488

Invading Mamluk Cilicia, an Ottoman army of 60,000 men under the vizier Ali Pasha and the beylerbeys of Rumelia and Anatolia was confronted by a Mamluk army of 40,000 men under Uzbey, comprised of 10,000 mamluks, 3,000 Karamanli Turkish exiles, and the rest of Arabs and Turcomans. The Mamluks, recognising the Ottomans' superiority not only in numbers but in weapons too (they were accompanied by artillery), decided to launch an immediate attack before the Turks could reform or rest. Nevertheless, it was the Ottomans who at first retained the advantage, though the Anatolians forming their right wing gave way early on when Sinan Pasha, their beylerbey, was killed. The opposite flank, comprised as it was of Karamanli vassals, also fled at this point, doubtless through an understanding with their exiled compatriots in the Mamluk army, and the Ottoman centre of Janissaries and household cavalry was then all but surrounded and submitted to repeated attacks. However, late in the afternoon Uzbey inexplicably withdrew, apparently not realising just how close to victory he was, and the Turks took this opportunity to fall back to their camp (looted by their fleeing Karamanli vassals), departing from thence before Uzbey's return to the battlefield next day.

KOZMINLUI FOREST, 26 October 1497

Withdrawing after their unsuccessful siege of Suceava in Moldavia, a Polish army under King Jan Olbracht was ambushed in the woods near Kozmin by Moldavian and Hungarian troops under Stephen the Great. The Moldavians, 'striking them from every side and felling trees upon them', forced the Poles to abandon their guns, flags and baggage and scattered their army through the forest so that according to partisan sources 'few came out alive'. Polish accounts claim that though the baggage train suffered severely and 8 guns were lost, the Moldavian attack was eventually beaten off, 'for the Moldavians could not long withstand the onset of the king's cavalry'. However, further ambushes continued to dog the Poles thereafter as they pushed on back to the Dniester, and it is said that the Moldavians killed so many of them that only one in every ten is supposed to have returned home with the king.

1 & 2. OTTOMAN SIPAHIS, 14th-15th CENTURIES

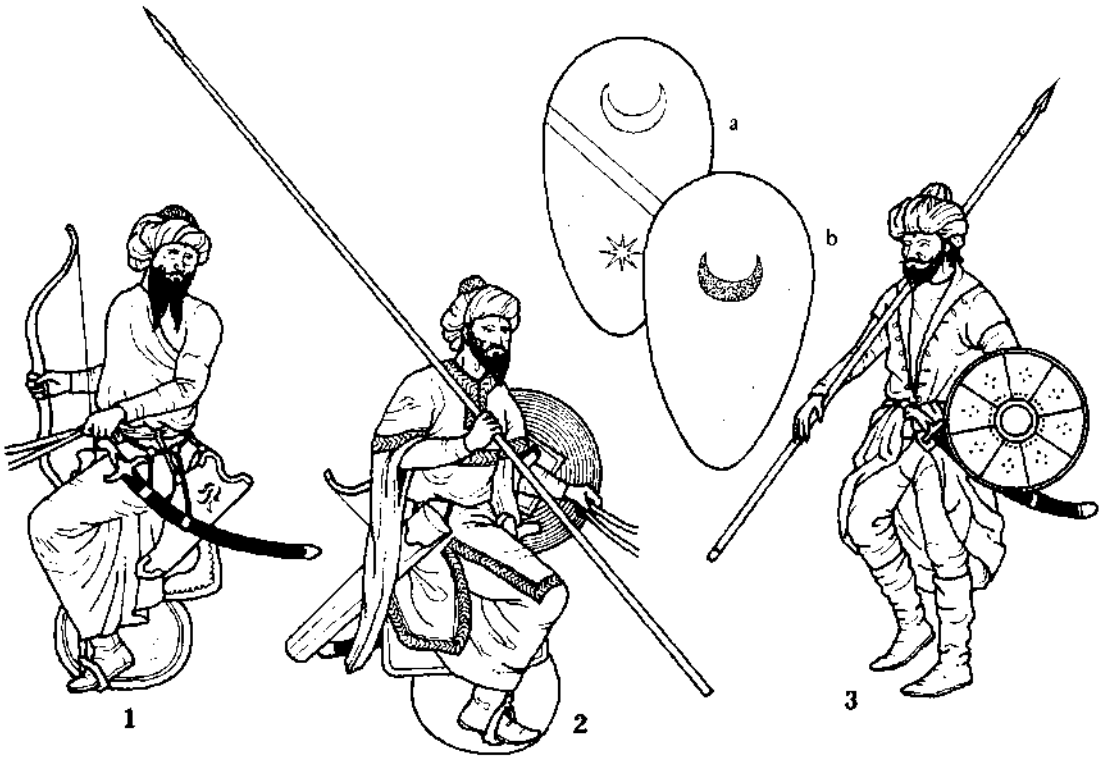
Pictures of Ottoman soldiers dating any earlier than the last quarter of the 15th century are very hard to come by. These two particular figures actually come from the 'Très Riches Heures du Duc de Berri', a ms. belonging to 1416, and are the earliest depictions that I have been able to find. Written descriptions too are uncommon before the 15th century. Fortunately, however, what evidence there is tends to confirm that their dress and equipment changed little between the 14th and 16th centuries, so that 15th century sources can safely be taken as representative of the previous century too.

One of the earliest Western descriptions of Ottoman military costume is that of Bertrandon de la Brocquière, a Burgundian traveller who visited the Ottoman Empire in 1433. He describes their dress as comprising 2 or 3 long cotton robes 'which fall to their feet', over which was worn another robe called a *capinat,* this time of felt, 'in the manner of a mantle'; he records that this was light and waterproof. Knee-length boots were worn, plus 'large drawers, some of crimson velvet, others of silk or fustian and common stuffs.' He adds that 'in war, or when travelling, to avoid being embarrassed by their robes, they tuck the ends into their drawers, by which they can move with greater freedom.' For this practice see figure 3. From other sources we know that a turban wrapped round a red cap completed the costume. The turban was usually white, but it is worth noting that the battlefield of Kossovo Pole in 1389, strewn with turbaned heads, reminded one Turkish chronicler of a vast field of tulips. We know from Arnold von Harff's account (1499) that the Silihdars at least all wore white turbans. Finally, all Turks wore beards.

Interestingly several contemporary Western sources are scathing regarding Ottoman arms. At his most optimistic Brocquière says that 'the arms of those who have any fortune are a bow, a *tarquais,* a sword, and a heavy mace with a short handle, the thick end of which is cut into many angles. This is a dangerous weapon . . . Several have small wooden bucklers, with which they cover themselves well on horseback when they draw the bow.' Elsewhere, however, he reports that an eye-witness told him how amongst an Ottoman force returning from a raid into Hungary 'there was not one in 10 that had both bow and sword', and Brocquière himself confirmed that 'of those I saw there were many more that had neither bow nor sword than there were armed with both'; this time he stated that only 'the best-equipped' had a small wooden targe. Pero Tafur too (1435-39) stated that the Ottomans 'want [for] many of the essentials of war', describing 'the whole of their fighting outfit' as comprising an iron staff (a *ghaddara?* — see note to figures 17 and 18), bow, quiver and 'tambourine' (possibly meaning a small shield, but more probably a drum, for which see figure 31). Janus Lascaris, who wrote 1489-92, similarly described the sipahis (who, he says, were 'assembled only with difficulty') as 'poorly-armed. Some carry a lance, but others only a scimitar or a bow.' In another passage he even says that only 'a part' even of the cavalry of the Porte had bows and *'carquois* of arrows'. Basically, then, Ottoman cavalry were variously equipped with any or all of the following: lance, mace, sabre (*kilij*), shield, bow and tarquais or carquois, these latter being two variant corruptions (Italian *turcassa* was another) of the Persian word *terkesh* or *tarkash,* meaning a quiver. Brocquière described one he bought as 'a white tarquais complete, to which hung a sword and knives'. The bow clearly remained the principal weapon of the Turks throughout this period. It was of composite construction, and usually decorated: surviving 15th century examples in the Topkapi Museum are painted in gold, green and blue arabesques and geometric patterns. The Topkapi also includes one 15th century example made of *iron*! For armour amongst sipahis see figure 9.

3 & 4. OTTOMAN INFANTRYMEN, 15th CENTURY

Ottoman foot-soldiers at the Battle of Nicopolis are described by Doukas as 'Turkish slingers and archers', and similarly at the siege of Constantinople in 1453 Leonard of Chios described the infantry attacking the breach in the walls as 'archers and slingers and javelin-throwers'. In both instances, however, it is only the light troops provided by the 'azabs that are being referred to (an eye-witness of Nicopolis specifically states that the infantry there fought without armour), and we know from Kritovoulos' chronicle in particular that such troops represented only one element of the Ottoman army's infantry, which he clearly divides into (a) such light troops as have already been mentioned, comprising archers, slingers and handgunners, plus some javelinmen, and (b) heavy troops made up of spear-armed 'heavy infantry and the shield-bearers' (see figure 8). He frequently refers to the latter troop-type, whose shields must have been bigger than the small bucklers already mentioned since he describes the light troops, both horse and foot, as being armed with these. However, it should be noted in addition that when referring to their infantry, Brocquière and other sources again record those of the Ottomans to have been poorly-armed. Brocquière in one place refers to them being



'destitute . . . of tarquais, helmets, mallets, or swords, few indeed being completely armed', and in another passage describes them as 'miserably accoutered, some having swords without bows, others without swords, bows, or any arms whatever, many having only staves.' Doukas similarly stated that 'most of them [were] without kitbag or rucksack, without spear, bow or sword . . . the majority of them carrying no more than a club'.

Of the two figures depicted here, 3 is from Caoursin's ms. account of the 1480 siege of Rhodes (see note to figure 44), while 4 is from a contemporary woodcut of the naval battle of Zonchio in 1499. Identical figures are to be found in pictures of Turkish armies as late as the 17th century. Clothing colours in the Caoursin ms. are principally red, dark and light blue, yellow, and green, with boots usually some shade of tan or brown and turbans shown in a variety of colours, predominantly yellow, tan and white. This particular figure, with his long topcoat tucked up through his waist-belt for ease of movement, is one of the few shown with a round shield, the majority carrying instead almond-shaped types similar to those also shown in the Zonchio woodcut (3a and b), where they are decorated with various combinations of crescents, stars and diagonal bands. Presumably it was such shields as these, doubtless adopted from the Byzantines, that Kritovoulos' 'shield-bearers' carried. Most of Caoursin's figures are spear-armed, but a few crossbowmen also appear. That the windlass or cranequin crossbow (*tatar-oky*) was used by the Ottomans is also confirmed by eye-witness accounts of the siege of Constantinople.

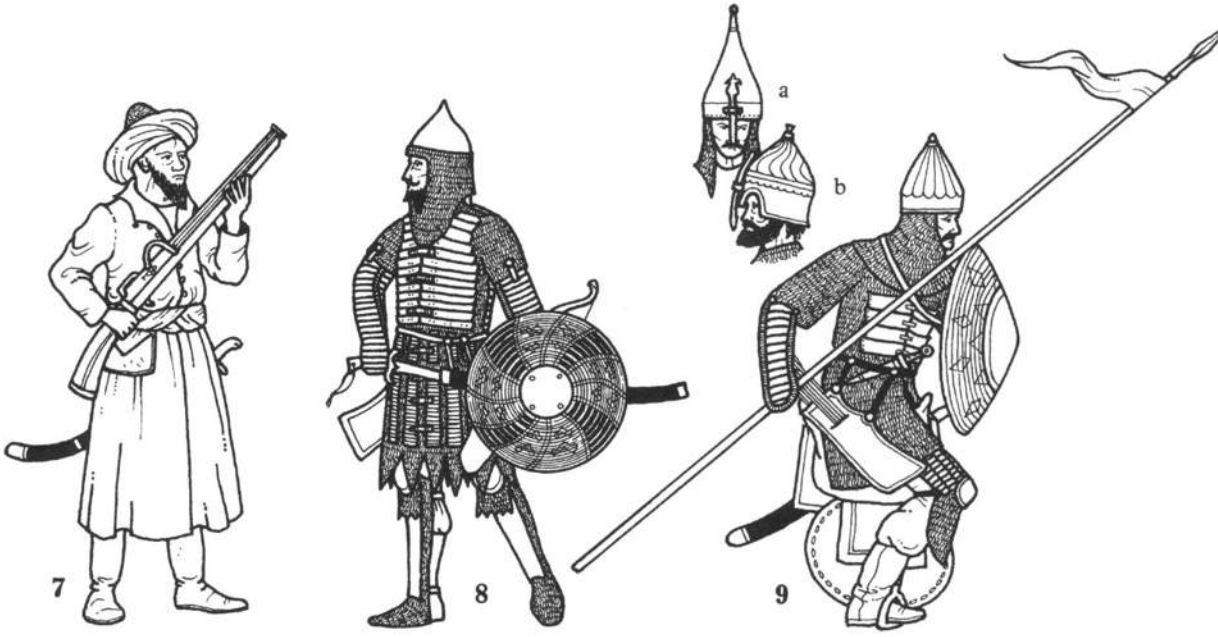
5 & 6. JANISSARIES, 15th CENTURY

The most recognisable feature of the Janissary was undoubtedly his hat, which is commented on by just about every contemporary source, Western and Ottoman alike. It was called an *ak börk* by the Turks, and a *mitra* or *pileus* by 15th century Latin writers, while Doukas tells us that 'in the common language of the Romans' (i.e., vulgar Greek) it was called a *zerkulah,* which, being a corruption of *zir kulah* (a mail coif, later with a shallow dish covering the top of the head) would tend to imply that a mail hood or helmet was perhaps worn beneath it (see also note to figure 8). Doukas describes the hat as 'made of the whitest felt, cylindrical in shape, snugly fitting the head, being as much as a span above the crown, and tapering to a point', a description which tallies remarkably well with the hat worn by figure 5, from a drawing made in Constantinople in 1479 by Gentile Bellini, possibly of a Solak guardsman. However, the origin of this white hat predates the establishment of the Janissaries. Uruj, a 15th century chronicler drawing on 14th century material, says it was adopted c.1340 on the suggestion of Orkhan's brother, 'Ali Pasha, who advised him to make all his army wear red hats except for his 'dependent slaves' (i.e., the Qapu Khalqi), who should wear instead a white hat. Idris al-Bitlisi, on the other hand, has it that the whole of Orkhan's army wore white caps, but that under Bayezid I it was ordained on the advice of Timurtash Bey that only the sultan's

personal troops should wear white hats, while the rest were to wear red. (Karamanli Turks too are recorded wearing red caps in the 14th century.) All the sources agree that the 'azabs and other Turkish soldiers ('both commoners and nobles', says Doukas) were thereafter distinguished from the Janissaries by wearing red hats such as can be seen in figures 3, 4, 7 and 10-13. Other late-15th century pictures show Janissaries wearing instead the more characteristic sleeve-cap that is to be seen in 16th century pictures, which would seem to confirm the likelihood that the hat which Doukas described, and which was worn by the Janissary Bellini drew, was actually that of a Solak. Figure 6, from a Persian ms. of the 1470s or 1480s, and 6a, from the Zonchio woodcut, both depict such sleeve-caps.

In addition to their hats, the Janissaries appear to have been identifiable by the fact that, probably along with other elements of the Qapu Khalqi, they were uniformed. It seems from Idris al-Bitlisi's chronicle that uniforms were first introduced under Bayezid I who, we are told, 'chose various garments for his army', the uniforms then introduced (of gold-embroidered silk according to Cantacuzene) seemingly lasting until the 1440s when, according to Pseudo-Sphrantzes, Murad II changed them. Our only clue to the colour of the new uniform that he introduced is to be found in the 'Ordo Portae' of c.1473-81, which tells us that every year each Janissary received lengths of linen and blue cloth, plus a shirt and a woollen kaftan. (Konstantin Mihailovic similarly states that each Janissary received a kaftan, a shirt, and 'large trousers made, as is their fashion, of 3 ells of cloth, and a shirt of 8 ells', but alas, he does not mention colours.) The ms. from which 6 comes, depicting Janissaries in action without the kaftan worn by 5 (which could be tucked up as described under figure 3), shows their tunics coloured blue, red and green — all colours recorded for Janissary uniforms in the 16th century — with red trousers and undershirts in a variety of colours. The rims of their zerkulahs are shown gilt, written sources similarly describing the rim as silver or gilt. The Zonchio woodcut shows Janissaries only in red and green kaftans (the only colours — other than brown — that its artist used).

However uniformly they may have been dressed, this uniformity did not extend to the Janissaries' armament. It would appear that they selected their own weapons. The 'Ordo Portae' says: 'They are armed, therefore, each to his liking, and each takes whatever arms he sees.' The majority, however, were bow-armed prior to the introduction of handguns (see next figure), and remained so until the end of this era, each Janissary receiving 30 aspers annually for the purchase of a bow and arrows. In his description of the Janissaries, Mihailovic states that 'some are archers who shoot bows, some are gunners who shoot mortars, others handguns, and still others crossbows'. A similar list of arms is provided by Lascaris, who wrote that the 'greater part' of the Janissaries were armed with 'only bows and swords', others having bucklers, assorted spears and polearms, and some handguns and crossbows, to which can be added maces, daggers, axes and javelins (*djerid*). The Janissaries were certainly using handguns by the mid-15th century at the latest, one contemporary referring to 650 arquebusiers and 50 gunpowder-makers among them at about that time. Certainly the first census of the Ottoman garrison of Serbian Novo Brdo in 1455 included 10 Janissary handgunners. There was a marked increase in the use of firearms amongst the Janissaries following several reverses suffered at the hands of the Mamluks in 1485-91.



7. OTTOMAN HANDGUNNER

The handgun was for a long time thought to have been first introduced amongst the Ottomans only between 1440-43, but it is now known that its introduction probably took place a decade or two earlier, one source mentioning handguns as well as cannon aboard Ottoman ships in 1421 and 1430. One anonymous Ottoman source records the use of handguns at the Battle of Varna in 1444, and most contemporary sources refer to handguns being used at the siege of Constantinople in 1453, the eye-witness Italian accounts calling them by the names *schiopetti* or *zarbattane* (the latter a corruption of *zabtana* or *zabtaniya*, one of the early names by which the Mamluks, and seemingly the Turks, called the handgun). The usual Ottoman name for the handgun was *tufek*, which probably derives from *tuwek*, recorded in the 11th century as a blowpipe used to kill birds with small pebbles; *zabtana* and *bunduq* have similar derivations.

Despite the presence of '10,000 culverines' (doubtless handguns in this instance) being referred to by Tetaldi and Montaldo at the siege of Constantinople, it is clear from many other sources that the Ottomans were nevertheless slow in their universal adoption of the handgun, and that in the first half of the 16th century they are still recorded as 'not yet used to the arquebus'. With this in mind, it is interesting to note that in the second half of the 15th century roughly half of the Ottoman handgunners in Serbia and Bosnia at least were provided by Christian auxiliaries. The figure depicted here is from the Zonchio woodcut.

8. OTTOMAN HEAVY INFANTRYMAN

As has already been mentioned under figure 3, it is clear from many contemporary accounts that a proportion of the infantry in most Ottoman armies were armoured, and it seems highly probable that the majority of such heavy infantry was comprised of regular troops, i.e. the Janissaries and other elements of the Qapu Khalqi. H. Russell Robinson actually suggests in his *Oriental Armour* that the mail and plate corselet of this figure (called a *korazin*) may have actually been that of a 15th century Janissary officer; certainly it was that of an infantryman since its skirt is not split for riding, and its completeness — leaving only his face, fingertips and the backs of his legs unprotected — is exceptional enough to make it improbable that it was worn by an ordinary soldier, who would probably have lacked either the *budluks* (leg-armour) or the *kolluks* or *bazubands* (vambraces), possibly both; certainly the 'Ordo Portae' states that although the cavalry wore leg-harness, the infantry did not. His helmet is probably an early *missiourka*, most popular in the Ottomans' western provinces and, by the 16th century, in Russia, Hungary and Poland too; in the 16th century the Turks usually wore it over a turban, and this may have been 15th century practice too.

In his 'Travels' of 1432-33 Brocquière wrote of the Ottomans that 'I have seen them wear very handsome coats of armour like ours, except that the links of the mail are smaller; the vambraces were the same [as those used in Western Europe; for the variant type of bazuband to which Brocquière is referring see figure 26] . . . Their armour descends almost half-way down the thigh, but a piece of silken stuff is attached circularly to the bottom of it, that falls down to the calf of the leg.' That all this was clearly visible means that armour

was *not* worn under a coat or tunic as has often been suggested. From what Brocquière says next it is clear that he is describing Janissaries: 'On their heads they wear a round white cap, half a foot[?] high, terminated in a point. It is ornamented with plates of iron on all sides, to ward sword-blows off from the face, neck and cheeks, and is like the helmets of France called sallets.' He adds that they usually also wore 'a bonnet of iron wire' with it, doubtless meaning a mail hood. That the Janissaries wore their tall white caps over their helmets in battle is confirmed by repeated references in contemporary sources.

Giacomo Tetaldi, who was present, says that at the siege of Constantinople in 1453 about a quarter of the Ottomans wore some sort of armour, either hauberks or leather jacks, a few even wearing French or Hungarian styles of armour. The 'leather jacks' are doubtless *kazaghands*, seemingly popular in this period even though no Turkish examples have survived (for a Mamluk example see figure 18).

9. OTTOMAN HEAVY CAVALRYMAN

This figure, based on surviving 14th-15th century armours in the Topkapi and Turkiye Askeri museums in Istanbul, wears a variation on the armour worn by 8, of a type which was widespread amongst Turks, Mamluks and Persians alike (see also 17 and 32). His helmet is the predominant Turkish type, called a *chichak*, which was usually tall and pointed, and often fluted as well. In addition it often had a nasal by the first half of the 15th century, or possibly even earlier; Doukas' reference to the death of Umur Pasha of Aydin at the assault on Smyrna in 1347 being the result of his 'visor' being 'pierced . . . between the eyebrows' may be an allusion to a nasal-bar on the amir's helmet. 9a and b depict two alternative types of helmet, 9a being another chichak dating to c. 1400-50 while b is a 'turban' helmet, so-called as a result of being designed in such a way that it could be worn over a turban; this one, like most, has a plume-tube atop the conical crown (though plumes were apparently little worn in battle at this date).

His armament comprises typical sipahi combination of bow, kilij, dagger and lance, to which an axe or mace was often added (but see also note to figures 1 and 2). His shield is of the cane variety described under figure 27, though Janus Lascaris describes sipahi shields as 'wooden targets like those of the stradiots'. The source from which figure 62 comes shows 4 Ottoman shields exactly like that of the Trapezuntine depicted, plus a fifth that appears to be a pavise like that carried by 126; both types may very well have been carried by 15th century stradiots.

By the 15th century most sipahis were armoured, as is indicated by the assorted terms used to describe them, such as *cebeli* (from *cebe*, a corselet), *burume* (a mail corselet), and *gecim* (armour for man and horse). It is apparent from sources of Mehmed II's reign that most of the cebelu in fact wore only a sleeveless, quilted cotton armour called a *bagirdaq*, often worn in addition under their mail by timariots, but by the end of the century Lascaris was of the opinion that the majority of sipahis had at least a mail corselet and a helmet.

10. OTTOMAN AKINJI, 15th CENTURY

Though depicted on foot, this figure from a late-15th century woodcut by Dürer is in fact one of the swarm of irregular light cavalry which accompanied every Ottoman army in the field. The characteristic Turkish costume worn here, with its broad-collared, long-sleeved coat, was undoubtedly copied by the Ottomans from their Balkan subjects, who wore very similar dress (see 14, 68, 78, 80 and 95). Indeed, Pero Tafur described Rumelian Ottomans in the 1430s as 'clad in the manner of the country', in long cloaks and coats 'open in front. These are made of fine woollen cloth, and of silk and brocades from Italy.' He also says that they wore 'boots of Damascene leather up to the knees, which are very hard, and to which the spurs are fixed', plus turbans or caps, and furs of marten, sable, ermine and fox. Pictorial sources (the earliest I know of being a Venetian relief carving dated 1474) show that the long sleeves of the coat were usually either tied together behind the back or else stuffed through the belt.

This is the sort of costume worn even by Mehmed II himself in the 15th century portrait by Sinan Bey, in which the topcoat is blue with white collar and facings, the tunic (which differs in being of the crossover style worn by figure 1) is brown with red cuffs and borders, and the turban is white wrapped round a red cap.

11 & 12. OTTOMAN MUSICIANS

From its very beginning the Ottoman state had a military band, called the *Mehteran-i tabl ü alem* (usually translated simply as 'The Military Band'), allegedly established late in the 13th century when Othman was sent a drum, *tug* and *sancak* by the Seljuk sultan Giyaseddin Masud II (1283-96) in recognition of his authority as a *bey*. In the 15th century Konstantin Mihailovic records its principal constituent as '4 great

drums, one camel carrying 2, and another the other 2; these drums are called in their language *kös* [Persian *kus*], and they beat them only if there is a great battle. And there is also a multitude of other drums, great and small.' This predominance of drums is confirmed by other contemporaries too, one recording how at the Battle of Tercan in 1473 Murad Palaeologus' attack was led by 'kettle-drummers and other martial instruments', while at Otluk Beli 'both sides sounded a countless number of nakers, drums and other warlike instruments, the noise and din being so great that one had to hear it to believe it.'

In 1453 Tetaldi wrote that the Ottomans 'have hardly any trumpets', using instead mainly drums and other instruments. Other sources, however, do mention trumpets — Chalkokondyles, for instance, records trumpets, pipes and cymbals. Barbaro, on the other hand, constantly refers to just 'castanets and tambourines'. The particular drummer and trumpeter depicted here come from Breydenbach's 'Peregrinationes' of 1486.

13. OTTOMAN GUNNER

This figure does not come from a contemporary ms., being based on a 16th century picture of the Battle of Mohacs (1526), but it seems highly probable that 15th century Ottoman artillerymen were little different. He wears a blue coat with a red sash and red trousers and shoes, plus an unusual type of black hat with the brim turned up and split at each side. The latter also occurs in a 14th century Byzantine ms. and is likely to have been of Balkan or South-East European origin like many of the Empire's artillerists, who were of diverse origins including Germans, Hungarians, Bosnians, Dalmatians and Italians (see page 14). The absence of a turban confirms his non-Turkish background.

14. BALKAN CAVALRYMAN, 15th CENTURY

Dozens of late-15th century sources depict bands of allegedly Turkish horsemen such as this, wearing long tunics, coats with large collars and, chiefly, brimmed caps, or less frequently turbans. Many of the caps may be poor renditions of the Janissary ak börk, but as will be seen later on, nearly all of the Balkan peoples (particularly the Albanians, Wallachians and Hungarians) wore similar brimmed caps, so it is quite likely that figures such as the one depicted here (from William Caoursin's 'Obsidionis Rhodiae Descriptio', printed in Ulm in 1496) are based on scanty information or eye-witness reports that failed to adequately differentiate between Ottomans, their assorted Balkan auxiliaries, and their Christian enemies. (Compare the similarity of dress between this figure and figures 10, 68 and 78, for instance.) This hypothesis is reinforced by the fact that the vast majority of such figures are lancers, when Brocquière specifically reports that 'Turkish lances are worth nothing; their archers are the best troops they have'. Also, very few wear turbans, so are therefore — like the Janissaries — of non-Turkish origin.

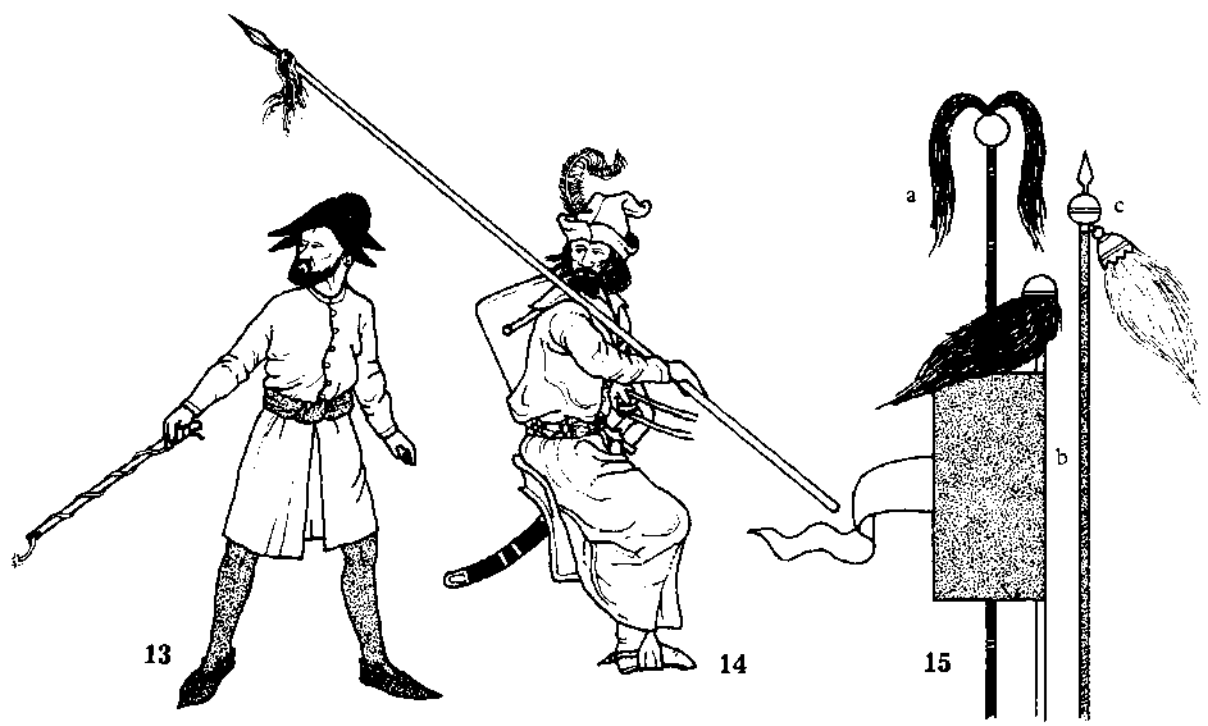
15. OTTOMAN FLAGS

The earliest Ottoman standard was the horse-tail or *tug* (Persian *tuq*), used to indicate the authority invested in a chieftain by the sultan — according to legend the founder of the Ottoman dynasty, Othman, had himself

10

11

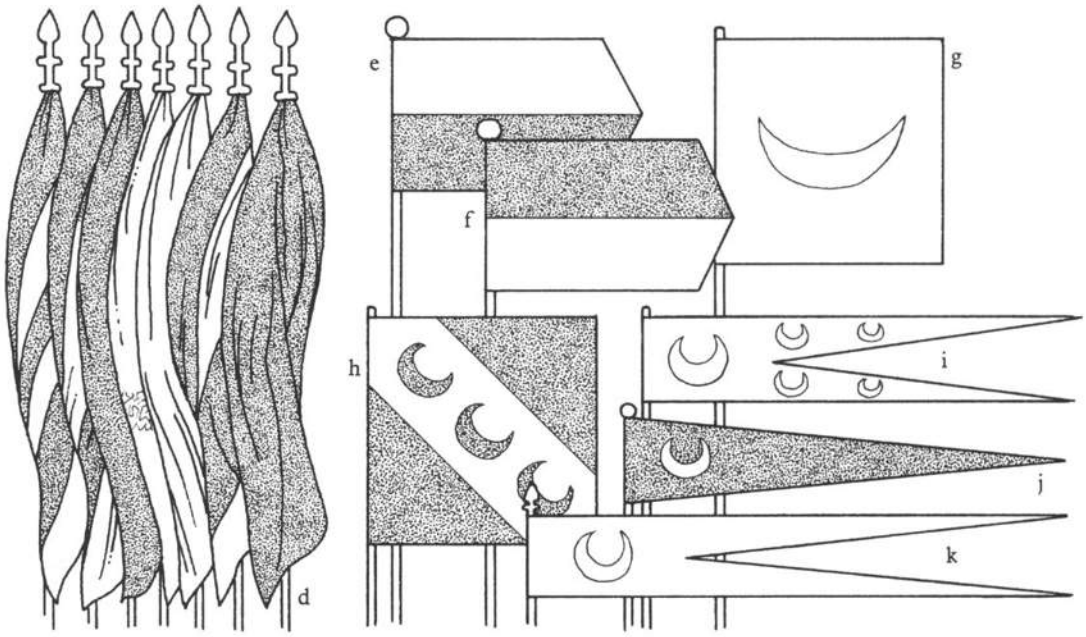
12



been sent a tug by the Seljuk sultan Giyaseddin Masud II in 1289, confirming his authority as a frontier chieftain (*uc bey*). Under the Ottoman sultans the provincial governors or sancak beys had one horse-tail, beylerbeys and viziers had 2, chief viziers had 3, and the sultan had 4, or later 6. Those of the sultans were carried by Silihdars. 15a depicts an Ottoman horse-tail standard from a Turkish picture portraying the 1529 siege of Vienna; it is black, with a gold ball and gilt fittings on the staff. 15b is a 14th century Persian variant, with a white horse or yak tail and red staff but again with a gold ball and gilt fittings. With Persian standards the ball atop the staff was more usually silver, these being described as 'full moons' in a number of sources. 15c is also Persian, being a good example of the frequent combination of horse-tail and flag, in this instance a black horse-tail and a red banner with a dark green tail. Tamerlane's army too carried horse-tail standards, his personal one at the Battle of Ankara, carried by his son Mohammed Sultan, governor of Samarkand, being surmounted by a crescent rather than a ball. Horse-tail standards were sometimes dyed, most often red. Those of the White Sheep and Black Sheep Turks, however, remained white and black respectively.

Konstantin Mihailovic has provided us with a brief but important description of the principal flags of the Porte in the 15th century, which he says numbered 4. He says: 'One banner is white, inscribed with golden letters, and that banner is supreme, for it signifies that all the sultan's power is there. It is called *alamsandiak* [probably Mihailovic is confusing *alam*, 'bannner', with *ak sancak*, 'white banner'] . . . The second banner is red, and this one is the court cavalry's. The third banner is green and red, the fourth is gold and red, and these are the Janissary court infantry's. And when these 4 banners are unfurled, the sultan is there among his courtiers.' It seems likely from this description that the group of 7 flags depicted in 15d, from the picture of the Battle of Mohacs already referred to under figure 13, represents the flags of the household cavalry with the sultan's in the centre. There are 2 red flags (third and seventh from left) and 2 red and green striped flags (second and sixth from left), and since one of each appears on either side of the sultan's white flag it seems possible that they are the banners of the Four Boluks. However, it is recorded by several authorities that it was the Sipahi-oghlans' flag that was red, while those of the Four Boluks are listed by George Gush in *Renaissance Armies* as red and white, red and yellow, green, and white, the former 2 for the Ulufeciyan and the latter 2 for the Gureba; he also gives the Silihdars' flag as yellow. The remaining 2 flags in the ms. pictures, however, are a striped red and yellow (or gold) one at the extreme left, and a green one to the immediate right of the sultan's. As can be clearly seen, there are several discrepancies between this picture and the sources from which George Gush's list was derived, and all that can be stated with any certainty is that this same group of 7 flags appears in the vicinity of the sultan in more than one 16th century Ottoman ms.

From the same picture, 15e and f are shown in the original accompanying the Janissaries and artillery. They are green over red and red over yellow/gold respectively, these colours tallying with Mihailovic's description



exactly. In addition each Janissary orta presumably carried its own individual banner, since the *Encyclopaedia of Islam* refers to each of them having 'an emblem that was placed upon its flags'.

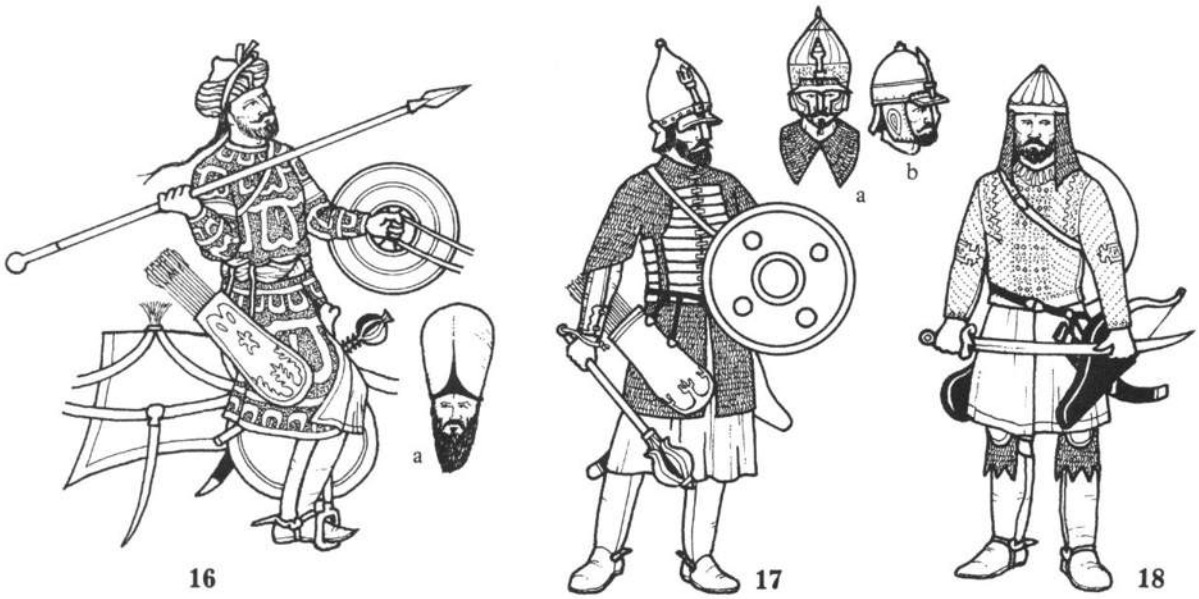
Mihailovic notes in addition that each beylerbey and sancak bey had his own banner 'given by the sultan', and it was surely these rather than their tug standards that gave the provincial governors their title of sancak bey, meaning 'lord of the standard'. They are probably the innumerable flags charged with stars, horizontal and diagonal bands and, above all, crescents, that are to be found in most Western and Eastern mss. alike throughout the 15th-16th centuries. 15g-k show a selection of such flags. The colours of 15g, from the Zonchio woodcut, are unknown (it is left plain in the original), but of the others 15h is red with a white diagonal band and red crescents, while 15i, j and k are white, red and light green respectively, all with light blue crescents. Flags carried at the siege of Belgrade in 1456 were described by Sa'd ed-Din as 'spangled banners, like flaming tulip beds', an impression confirmed by ms. illustrations, which indicate that the predominant colours were red, blue, white and yellow or gold.

16. MAMLUK 1366

As can be seen from this figure (from a *Furusiyya* ms.), Mamluk costume of this period remained basically unchanged from that shown in *Armies and Enemies of the Crusades*, comprising a cap, tunic, topcoat (*qaba*) and *khuff* boots. The coat was still usually the yellow, red or white 'Tartar' coat, which persisted throughout the period under review, though towards the end of the Circassian era different types of coat, such as the short-sleeved *sallari* in particular, and the *maluta* coat with its large collar, were recognised as characteristically Mamluk. (According to William Popper, enlisted free troopers in the Mamluk army did not wear such topcoats; their belts — for which see below — were thus visible, this allegedly being 'one of the distinguishing marks' of their lower rank. It therefore comes as no surprise to find that the bestowal of a sallari to the non-mamluk chief of the black arquebusiers in 1498 led to a revolt by the Royal Mamluks.)

The cap could be one of a variety of types, notably the *sharbush* (abolished under the Circassians; see figure 41 in *Armies and Enemies of the Crusades*); the *kalautah* (a yellow or red cap worn with a kerchief wrapped round it as here, later of somewhat greater dimensions); the *taqiyya* (a busby-like hat narrower at the bottom than the top and sometimes divided horizontally into 2 colours, often black above and green below; see 16a); and lastly the *zamt* (worn by figure 20), a red woollen hat considered so typical of Mamluk dress by the late-15th century that, together with the maluta coat, it was required to be worn by Mamluks for recognition purposes following the Ottoman conquest in 1517.

Boots, occasionally laced, were of yellow or black Bulgarian leather in winter and white leather in summer.



16 17 18

Similarly, written sources tell us that in winter outer garments were of coloured and decorated wool or silk, but in summer were plain white. However, although the ms. from which this figure is taken mainly shows white (i.e. summer) boots being worn, the heavily embroidered coats (with *muqallab* flap crossing the chest diagonally in either direction) are depicted in a variety of rich colours including dark and light blue, red, pink, green and tan (yellow?), therefore presumably portraying winter coats. Hems and cuffs are coloured gold in the ms. while linings and undershirts are either white or some plain, contrasting colour. The *tiraz* armbands are invariably gold, and we know that by the beginning of the 15th century they were usually of gold brocade or embroidered black silk, sometimes bearing decorative motifs, inscriptions or even the sultan's or an amir's name, but otherwise plain. Caps are shown yellow and light brown in the ms., while turbans are invariably white, coloured turbans tending to be used by the Mamluks to distinguish non-Moslems (notably blue for Christians and yellow for Jews). Hair is worn long in a pigtail, younger Mamluks being clean shaven while older men wore beard and moustache.

A belt (*hisaya*, previously *mintaqa*) of decorated precious metal roundels, studded with precious stones in the case of high-ranking amirs of 100, completed a Mamluk amir's costume, ordinary soldiers instead wearing the *band*, a belt comprising of a coloured sash. The sword was suspended from this belt at the left, while at the right hung the *saulaq*, a bag of black Bulgarian leather.

Arms depicted in this ms. comprise 2 types of lance (one about 9 feet long, the other about 5½ feet with, usually, a spherical ferrule), slightly curved sword, bow, shield (both the convex hide *daraqa* and the wooden or iron *turs*, held by arm-straps and a central grip behind the boss), and iron or steel mace (*dabbus*), worn under the right knee and stirrup leather. The lance (*rumh*) remained a popular weapon amongst the Mamluks — in fact perhaps more popular than the bow with some — and training in its use underwent considerable change and development throughout this period. We read, for instance, that the way it was held in battle was different by the mid-15th century to what it had been at the end of the 14th century, perhaps indicating that it was couched underarm by the former date since we know it was wielded overarm at the latter. Ibn Iyas records that the lance was either entirely of steel, or of wood with a steel blade.

Although the composite bow prevailed amongst Mamluk horsemen, an archery manual dating (probably) to c. 1368 contains in addition a section on the use of a crossbow from horseback. The type of crossbow to be used was the *qaws ar-rikab* ('stirrup crossbow'), used in conjunction with a belt (*jabbadh*) and double-hooked claw (*khattaf*). The belt was worn across the shoulder with the claw at the right side; to reload, the rider had to take the reins in his left hand and the bow in his right, set the string in the claw-hooks, bend forward until his right foot could locate in the crossbow-stirrup, and then stand up in his stirrups until the string caught on the firing nut. All in all this exercise would seem to have required rather more physical dexterity than most people possess! This source also mentions the use of a horn clip over the nut 'to prevent the bolts from falling out', a particularly useful device for a mounted crossbowman; Payne-Gallwey mentions such clips as first appearing in the 16th century, but clearly they were in use considerably earlier.

17 & 18. MAMLUKS IN ARMOUR, 14th-15th CENTURIES

The two principal modes of mamluk armour, comprising the *djawshan* and the kazaghand, can be seen quite clearly in these figures. The djawshan was a coat-of-mail reinforced with iron splints (*teneke*) identical to the Ottoman korazin, for which see figures 8 and 9. The use of this type of armour, which was introduced in the 13th century, steadily increased throughout this period, but even in the 15th century it was still used almost exclusively by amirs, amongst whom it was very popular. That worn by figure 17 has an opening down the front, joined together by hooks and buckles, while others had openings down the side. The laminae were often stamped or inlaid with ornamental patterns or inscriptions, as too were helmets, the inlay sometimes being gilt. Ordinary mail corselets (*zardiya*) remained in use too. Al-Maqrizi records that in the 14th century some were very long, the word 'dragging' tending to suggest they could perhaps be ankle-length. In the late-15th century Circassian coats-of-mail often had large collars as depicted in 17a.

The kazaghand worn by 18 is based on the only known surviving example, in the Muzeo Nazionale in Florence and dating to c. 1438-56. It is a short jacket of brigandine construction, made of very strong material covered in crimson velvet and peppered with brass nails. By the beginning of the 15th century such a corselet was usually called a *karkal*, Qalqashandi describing it at that time as made of iron laminae covered with red or yellow brocade, silk or velvet, while Taghribirdi and other sources indicate that, unlike the Florentine example, it was usually sleeveless. We are also told that Mamluk soldiers using firearms (presumably including handgunners) wore karkals, in their case somewhat less plush than those of the socially superior cavalry, being covered in *bolas* (seemingly some sort of hair-cloth) rather than silk or velvet. It would seem that by c. 1400 at the latest the karkal was the most common form of Mamluk armour. Qalqashandi observed at the beginning of the 15th century that though mail corselets had once been widely worn, by that time the karkal prevailed instead, and in 1422 Gilbert de Lannoy described typical Mamluk armour as comprising a 'silk-covered corselet'. Nevertheless, older styles of armour took a long time to entirely disappear, since it was customary for the equipment of deceased mamluks to be redistributed amongst their comrades-in-arms.

Additional items of armour comprised bazubands and mail and plate thigh and knee armour, both of Persian/Turkish type. The shins were normally left unarmoured, the thick khuff boots presumably being regarded as adequate protection, but by the 15th century a mail and plate 'boot' was sometimes worn.

According to Qalqashandi 2 principal types of helmet were in use in Mamluk Egypt in the earlier part of this period, comprising the *baida* ('egg') protecting only the head, and the *mighfar*, worn by 18, which had a mail avantail attached by vervelles to its lower edge to protect the neck and ears, and sometimes a nasal. A third, much older, type also known to have survived into the 14th century replaced the avantail with a plate neck-guard. During the 15th century at the latest 2 additional types of helmet also appeared and thereafter predominated amongst amirs, these being the *kawnas* and the *muwa'ama*. An early example of the former worn by 17 (that of Sultan Barsbay, 1422-38) demonstrates its principal characteristics, which were that it was tall and had a peak, nasal, neck- and ear-guards. That shown in 17a is a later example, dating to the second half of the 15th century. The more rounded muwa'ama gradually replaced the kawnas, closely resembling later 16th century European types. 17b depicts that of Khairbak, last Mamluk governor of Aleppo, dating to c.1515. Turban helmets such as are described and depicted under 9b were probably also worn, H. Russell Robinson's *Oriental Armour* including a photograph of a 15th century Mamluk turban helmet. A late-14th century military manual describes Mamluk helmets as being worn with a padded lining buttoned inside, perforated to 'diffuse the substance of the blow', and late Circassian sources speak of helmets being fastened with a leather strap buckled under the chin.

Both figures carry round wooden or iron shields with guige-straps, though a small number of kite-shields may also have remained in use into the early Circassian period. They are armed with the conventional Mamluk combination of sword, mace, lance and bow, Arnold von Harff reporting that each Mamluk took 2 bows with him on campaign. To judge by surviving examples the sword remained largely straight, though many ms. illustrations show slightly curved blades (see, for example, figure 16) and the scimitar was in use too from the early-14th century. L. A. Mayer says that scabbards were of wood covered in leather, shagreen, damask, velvet or metal, those for curve-bladed swords opening 'spring fashion' at the back near the top. Another type of sword called a *ghaddara*, mistakenly described by Mayer as a 'steel staff', was kept in a scabbard at the saddle. This was the Persian *quaddara*, a broad, long, straight-bladed sword which had parallel edges for most its length; it is probably this same weapon that Pero Tafur intended by his description of Ottoman cavalrymen carrying 'an iron staff' at the saddle. Ibn Iyas records that the use and manufacture of the ghaddara was, curiously, prohibited after 1512 by the Mamluk sultan Qansuh al-Ghawri.

19. MAMLUK SERVANT, 15th CENTURY

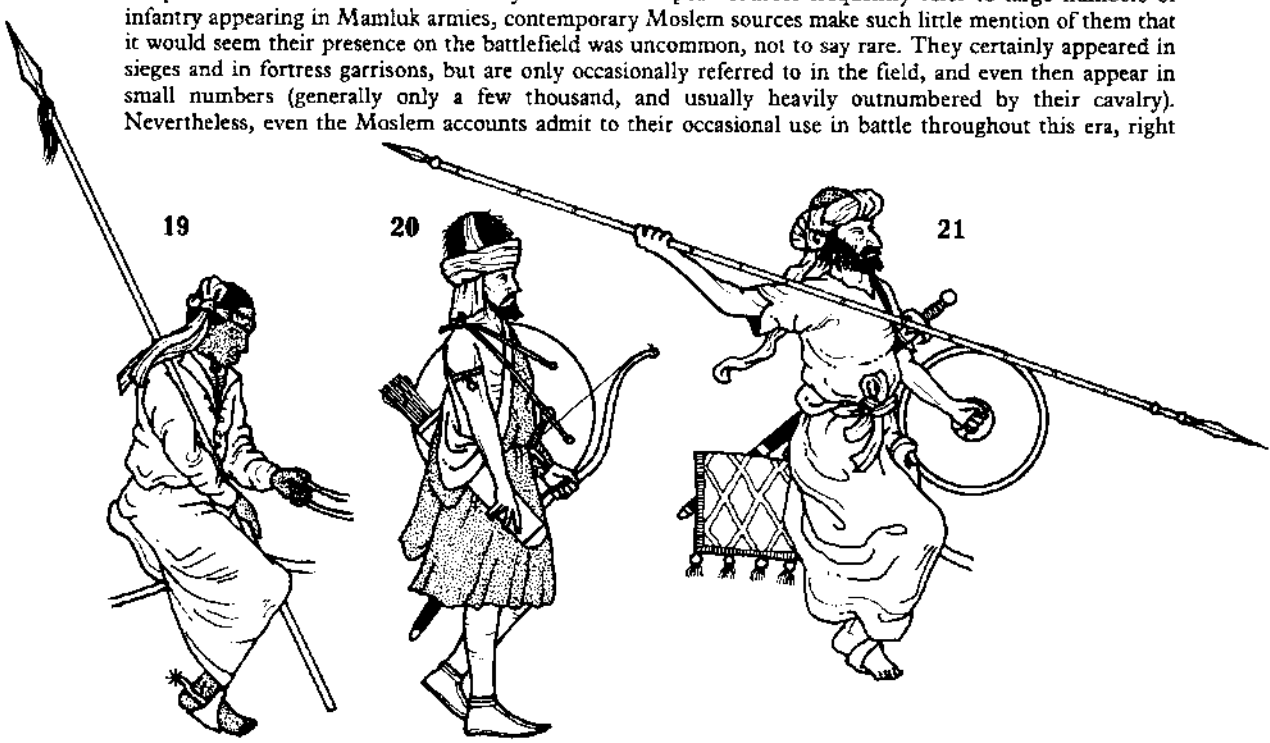
After the disbandment of the ex-Fatimid black regiments by Saladin and his successors, Negro soldiers disappeared from view so completely that, as Bernard Lewis states in his *Race and Color in Islam*, 'black fighting-men did not reappear in the armies of Egypt for many centuries.' Indeed, Ibn Iyas and other sources make it abundantly clear that the only capacity in which a Negro slave (*'abd*) could be found in the army during this period was as the servant of a mamluk, Arnold von Harff drawing such a servant in 1498 when he accompanied a Mamluk army from Cairo to Damascus, this figure being based on his drawing. Von Harff reported that the servant rode the second of the mamluk's 3 horses, on which was also loaded 'a small tent, meal, and other necessary provisions'. The lance he carries here is not his own (he is unarmed), but belongs to the mamluk. Elsewhere von Harff adds that mamluks had at least one servant, some having 30-40 and some even 2-300. Ayalon has pointed out that each mamluk was accompanied by at least one white servant called a *ghulam*, who as Qalqashandi explains was responsible for looking after the horses; the tasks for which the 'abd was responsible must therefore have been menial ones indeed.

Only very late in the Circassian era do black soldiers, as opposed to servants, reappear, when Sultan Qaytbay and his successors equipped several hundred *'abid* with handguns, for which see page 42. The earliest reference to these black arquebusiers dates to 1490, when they were fielded against the Ottomans, which Ayalon therefore states to be 'the earliest known date for the use of the handgun in the Mamluk kingdom'. However, there is one considerably earlier reference, Brocquière recording that the 30-odd guards of a caravan returning from Mecca that he encountered in 1432 included amongst their arms 'small arquebuses, which they fired off every now and then.' Ayalon's date of 1490 can therefore only be taken as the earliest known reference to handguns in the Mamluk *army*, not the kingdom.

The handgun was chiefly called *al-bunduq ar-rasas* ('the pellets of lead') or, later, simply a *bunduqiyya*. Other than blacks, Mamluk handgunners included Maghribis, awlad an-nas and other non-mamluks. At al-Raydaniya in 1517 they even included Europeans, Ibn Iyas recording a contemporary rumour that the Grand Master of Rhodes supplied as many as 1,000. Mamluk artillerists also included many blacks.

20. MAMLUK FOOT-SOLDIER c. 1500

Despite the fact that 13th-15th century Western European sources frequently refer to large numbers of infantry appearing in Mamluk armies, contemporary Moslem sources make such little mention of them that it would seem their presence on the battlefield was uncommon, not to say rare. They certainly appeared in sieges and in fortress garrisons, but are only occasionally referred to in the field, and even then appear in small numbers (generally only a few thousand, and usually heavily outnumbered by their cavalry). Nevertheless, even the Moslem accounts admit to their occasional use in battle throughout this era, right



up until the fall of the kingdom in 1517, and significantly at least one Mamluk military manual (dating to c. 1400) describes their battlefield role in some detail. They seem to have been provided chiefly by Bedouin Arabs, al-Ashir or mountaineers, plus some horseless halqa.

A report drawn up for King Henry II of Cyprus in 1311 describes the Mamluk infantry as poorly-armed, carrying only bows, and unable to stand up to Christian crossbowmen. A century later Gilbert de Lannoy similarly described them as 'a miserable race, clothed in a shirt without stockings or breeches, their head covered with a turban . . . they have few bows, swords, or any kind of defensive weapon'. However, the 'common foot-soldiers along the coast of Syria' he described as 'armed with a bow and arrows, and a great many of them have swords.' These latter are probably the al-Ashir or Druzes, who in addition provided cavalry. The particular figure depicted here is one such, and comes from 'The Reception of Ambassador Domenico Trevisiano at Cairo', a painting by a member of Gentile Bellini's school usually attributed to c. 1512 (the date of the embassy), but in fact probably portraying an earlier embassy to Damascus and predating Bellini's death in 1507; L. A. Mayer's *Mamluk Costume* actually mentions that a type of hat (the taqiyya) depicted in the painting was only worn in the period 1481-1501. He is armed with a shield, bow and sword, and has bared his right arm, presumably for easier use of the bow (Furusiyya manuals stating that in training too archers often rolled up their sleeves). His tunic is blue with a white lining, shoes are red-brown, the shield dark brown, and his hat is a red zamt with a white turban wrapped round it.

21. BEDOUIN TRIBESMAN

This figure, again based on a drawing by Arnold von Harff, depicts a typical Bedouin, whom von Harff describes as 'a rough, blackish, hard people . . . [who] ride with bare legs and bare feet in the stirrups'. He adds that they wore robes with wide sleeves and a round hat of 'rough crimson wool' with a linen turban that 'fell down on each side', presumably meaning that it passed under the chin in the usual Bedouin fashion, even though his picture does not show this. Their arms he gives as a lance ('a long, hollow tube having an iron point', i.e. made of cane) and a shield, described as 'round, according to their custom, convex at the centre, whence came a thick point of iron', surrounded by a silk fringe. Cane lances such as von Harff records were light and resilient (Gilbert de Lannoy describes them as 'flexible'), the best coming from Persia. They were usually some 10-12 feet in length and often had a second, slightly smaller blade at the butt-end, which otherwise normally terminated in a small metal ball. Brocquière, for instance, describes the lances of 2 Bedouin he encountered near Samaria as 'long, thin poles shod at the ends with iron, one of which was pointed, the other round but having many sharp blades' (presumably meaning it was spiked). A long, straight-bladed sword would have been carried too, slung from the right shoulder as depicted in Raschid al-Din's pictures.

Bedouin turbans and shirts were invariably white, though coloured or striped topcoats were often worn, Persian mss. usually showing these in a range of colours that included most shades of red, blue, brown and green. These same mss. often show Bedouin fighting from camels, de Lannoy recording that the Bedouin of Syria and Egypt similarly still rode camels as well as horses.

22. MAMLUK HERALDRY

Only the sultan and his amirs could have coats-of-arms (called *runuk*), Qalqashandi recording c. 1412 that it was customary for every amir to have a special emblem 'according to his choice and preference', this to be borne on the caparisons of their horses and camels, on their shields, their ships, their swords and their property. Such devices were hereditary only to such descendants as followed military careers. They were probably originally granted by the sultan himself and at first usually represented the office which the bearer had either held or received at the time that he was made an amir, but during this period they were probably chosen by the amirs for themselves. Abu'l Fida, who died in 1331, recorded that 'the emblem of the secretary is the pen-box, and of the armour-bearer the bow, and of the superintendent of stores, the ewer, and of the master of the robes the napkin, and of the marshal is the horseshoe, and emblem of the *jawish* is a golden saddle.' Of the emblems depicted here 22a is the table of the *jashnegir* (food-taster), 22b the pen box of the *davadar* (secretary), and 22c the sword of the *silahdar* (armour-bearer), often borne in place of the bow recorded by Abu'l Fida. For further emblems see *Armies and Enemies of the Crusades*.

As with their European counterparts, as time passed Mamluk coats-of-arms became steadily more complicated. By the first half of the 15th century the arms were normally divided horizontally into 3 compartments with different emblems in each, as depicted in 22d and e, becoming more complex yet and bearing a plethora of emblems in the period between the mid-15th century and 1517, as can be seen in 22f.

From the evidence of surviving examples it would appear that the colours used consisted of white, yellow, red, blue, green, brown and black, and clearly the formal regulations of European heraldry, forbidding the use of colour on colour or metal on metal, did not apply. Indeed, the choice of colours for his coat-of-arms was entirely up to the individual amir.

23. PERSIAN CAVALRYMAN c.1320

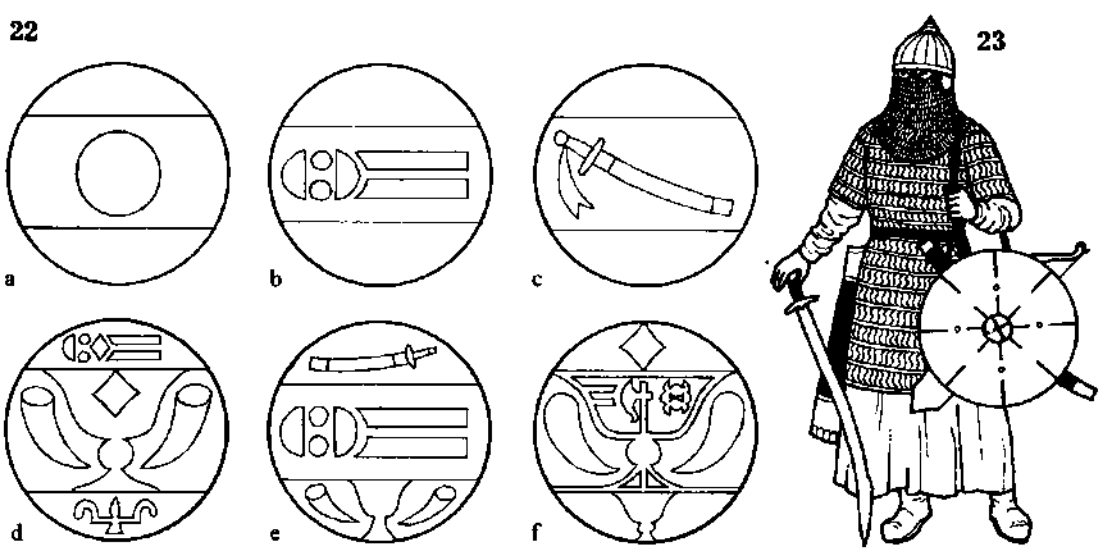
Although there were, from time to time, some subtle variations in style from province to province, it is apparent that on the whole virtually identical armour was worn throughout all the Iranian lands during this period, and regardless of their true provenance most of the figures depicted in the following sequence could, subject to their dates of origin, equally well be Ilkhanids, Jalayrids, Black Sheep or White Sheep Turks or Timurids.

This figure wears armour of traditional Iranian style such as continued to survive with some modifications well into the 14th century in such parts of Persia as remained under native dynasties. Elsewhere Mongol equipment soon came to predominate, though native styles of shield in particular disappeared more slowly. That carried here is of painted leather or leather-covered wood (the old Arab *daraqa* or *turs*); it was probably from these that the characteristic Persian small leather (later metal) shield with 4 bosses evolved, this first appearing in the late-13th century and surviving until as late as the 19th century. 23a and b depict examples of the other native Iranian shield-type still to be found in occasional use until the 1370s. 23b is actually from an Ilkhanid ms., Raschid al-Din's 'Jami al-Tawarikh'.

24 & 25. PERSIAN CAVALRYMEN c.1335

Ilkhanid arms production was organised under Ghazan (1295-1304), who saw to it that Iranian craftsmen were taught how to manufacture Mongol-style armour and ordered that the armourers in each town and province were to be paid an annual salary in exchange for producing specific numbers of bows, arrows, quivers, armours and so on, their output increasing in this way from 2,000 to 10,000 armours per annum. The predominant type by the beginning of this period was the *khuyagh* depicted being worn by figure 24, a lamellar or laminated corselet (the 2 types are often indistinguishable in contemporary pictures) with arm and leg flaps, in the early part of this period often constructed in the form of a long coat. It was mainly of iron, sometimes of bronze, and often enamelled or painted. There were usually openings down the sides (or, less often, the front or back) and a very distinct seam down the middle of the back. Buckles and clasps are depicted very clearly in Raschid al-Din's mss. of 1306-15.

Throughout most of this period Persian helmets retained much the same form, this being hemispherical with a reinforced brow (often in the form of an upturned peak as in 24b), a plume-tube or spike (later evolving into a tall pointed crown), and either a mail, lamellar or leather aventail or hood, or earguards in the form of 2 or occasionally 3 overlapping discs or flaps (24c). Some had in addition a nasal (24d), which had become movable by the beginning of the 15th century; Clavijo, for instance, describes Persian helmets in 1404 as



'round and high, and in front a plate, 2 fingers broad, descends as far down as the chin, which can be moved up and down and is intended to protect the face from a sword cut.'

Figure 25 wears a fabric, felt or leather armour called a *khatangku dehel* ('coat as hard as steel') by the Mongols. This could either be worn on its own as here or else under the khuyagh. It may have sometimes been reinforced with small metal plates, stitched between 2 layers of thick fabric brigandine-fashion like the Mamluk karkal (see figure 18, and also 28, 31 and 39). The leopard-tail entwined round the arrows protruding from the quiver of this figure is characteristic of soldiers depicted in Persian mss. of the 14th and early-15th centuries. It was seemingly wound in and out among the arrows in such a way as to stop them from rubbing against one another, which would have damaged the flights, and appeared at least as early as 1306.

Although it is almost invariably the sabre that is depicted in pictures, the sword still occasionally appears alongside it until as late as 1420.

26. PERSIAN CAVALRYMAN c.1375

The disc (*aina/a'ineh,* or mirror, *gogusluk* in Turkish) evident on this Jalayrid figure, and more so on 27 and 28, was possibly of Chinese origin, introduced into Persia through the Mongols and first appearing in contemporary illustrations about 1330. Most commonly it was worn on a quilted or brigandine-like armour as described above, often appearing on the back as well as on the breast. It was also sometimes worn on the khuyagh until the second half of the 14th century, and continued to occasionally appear on mail corselets thereafter. Usually it was circular, but as early as the 1330s was occasionally rectangular in shape, this being the origin of the *char aina* or 'mirror-armour' so popular in Persia by the mid-16th century. The armour 'with gilt borders, wonderfully polished' recorded amongst the booty taken by the Ottomans after Otluk Beli in 1473 is perhaps an early reference to such mirror-armour.

The tubular vambraces worn here, called bazubands, first appear in ms. pictures c.1370, but since they were by then already fully developed their origin probably predates this by some years. A rounded extension to protect the back of the hand made its appearance at the very end of the 14th century but was not always present, and thereafter the bazuband remained virtually unchanged until its abandonment in the 19th century.

His lance (*nize*) is characteristic of those to be found in Persian mss., wielded overarm in one or both hands or couched underarm. It is about 12 feet long, of cane, with a butt-spike, a gilt socket and a red, blue or green pennon.

27. PERSIAN CAVALRYMAN, EARLY-15th CENTURY

This Timurid figure is probably typical of the better-equipped elements of Tamerlane's armies. According to Sheref ad-Din, in a review prior to the campaign of 1390-91 each Timurid warrior had a lance, sword,

26 27 28

dagger, mace, lasso (*kemend*), a buckler covered in crocodile hide, and a tiger-skin saddle-cloth on his horse, elsewhere mentioning their principal equipment as 'sword, mace, lasso and bow', the last item an obvious omission from his first list since we are told in other sources that each Timurid was expected to provide himself with at least a bow, quiver, 30 arrows, and a buckler. He also wrote of 'maces, iron armour for the horses, all the coats-of-mail, the swords, the bows and arrows, which were distributed to his army' by Tamerlane, referring several times to 'fully-armoured cavalry covered in coats-of-mail', doubtless much like the figure depicted. That mail corselets remained in use alongside laminated and lamellar corselets is clear from contemporary pictures, but outside of central and southern Persia and Transoxiana they were uncommon until the 15th century, when the use of mail underwent a revival throughout Persia (see, for example, figure 32). Under Mongol influence the mail corselet had been adapted into a sort of wrap-round Tartar-style coat, and it is possibly just such a corselet that is worn by this figure.

Drawing on the accounts of eye-witnesses, Bertrando di Mignanelli (a contemporary who lived in Damascus, to which he returned in 1402 after the Timurid sack of the city) reported that Tamerlane 'did not have warriors with lances because they did not know [how] to use lances. They had only swords and bows'. Since we know from Sheref ad-Din's chronicle that Timurid equipment *did* include lances, we should probably interpret this statement as an indication that in action archers far outnumbered lancers. Mignanelli adds too that 'in place of corselet and breast-plates they always carried large shields', the implication therefore being that they were all unarmoured — which is not true either. The shield referred to is probably either the leather-covered *toure* or the iron-covered *tcheper* (Persian *seper*), whereas that carried by this figure is the light but arrow-proof cane *khalkha.* This was probably introduced into Iran by the Mongols in the 13th century, but it is not clearly shown in illustrations until the mid-14th century (though Raschid al-Din's pictures may indeed depict such shields since they are shown patterned on the inside as well as the outside). It was circular and convex with a large iron boss, and was constructed of cane interwoven with coloured silk or wool to give the bright, geometric patterns evident in many contemporary ms. miniatures as well as on surviving 15th-16th century examples; 'worked with silk or thread' is how Contarini described those of the White Sheep Turks in 1475. In addition it was fabric-lined and had a leather cushion behind the boss, and a leather grip. This type of shield became known as a *kalkan,* the name under which it remained in use in Persia and Turkey up until the 18th century.

Finlay credits Tamerlane with the introduction of uniforms into his army, writing that it 'was one of the first . . . in which the various bodies of men were distinguished by the colours of their uniforms', though he does not cite a source for this dubious piece of information.

28 & 29. PERSIAN CAVALRYMEN c.1430

These Timurid figures wear the two most common 15th century varieties of the khatangku dehel described

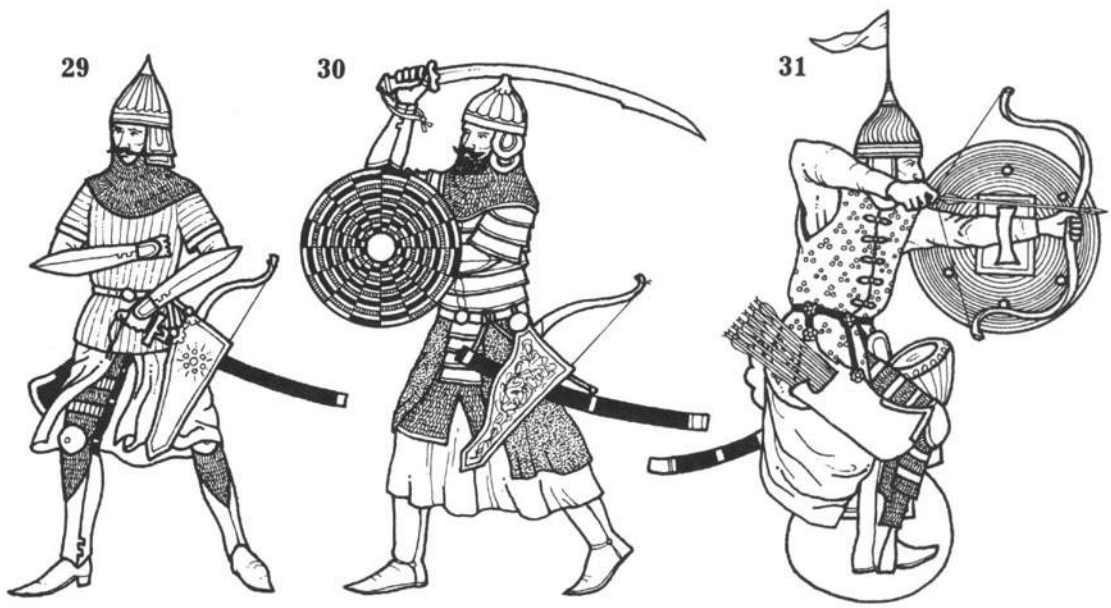
under 25. That of 28, dating to c.1429-30, is of brigandine construction with an aina in the middle of the chest, while 29 (c.1435) wears a vertically-quilted type, with the sleeves invariably quilted horizontally, that appears in ms. illustrations from the second half of the 14th century. Both in addition wear leg-harness, appearing here for the first time. The characteristic Near Eastern style of composite mail and steel splint thigh and knee armour worn by 29, to be found in use in Persia, Ottoman Turkey, and Mamluk Egypt alike, first seems to have appeared in Persia in the late-14th century, though at that date without the mail fringe below the poleyns. 28 substitutes brigandine-style armour on the fronts of his thighs, strapped at the back, plus poleyns, greaves and sabatons of very Western appearance. Indeed, such armour may have been introduced as a result of Western influence since it is known that European armours were occasionally imported into Persia (Ilkhan Oljeitu, for instance, bought 1,500 armours and helmets from a European trader for his 1315 invasion of Syria). One unique ms. that has been dated to c.1370-80 (but more probably belongs to the early-15th century) even shows extremely complex leg-harness with poleyns and articulated sabatons of mail and plate attached, the whole lot being strapped behind the knee and to a belt worn under the armour at the waist, just like European cuisses. The same source also shows sophisticated arm-harness with mail and plate gauntlets attached, articulated at the wrist by bands of mail.

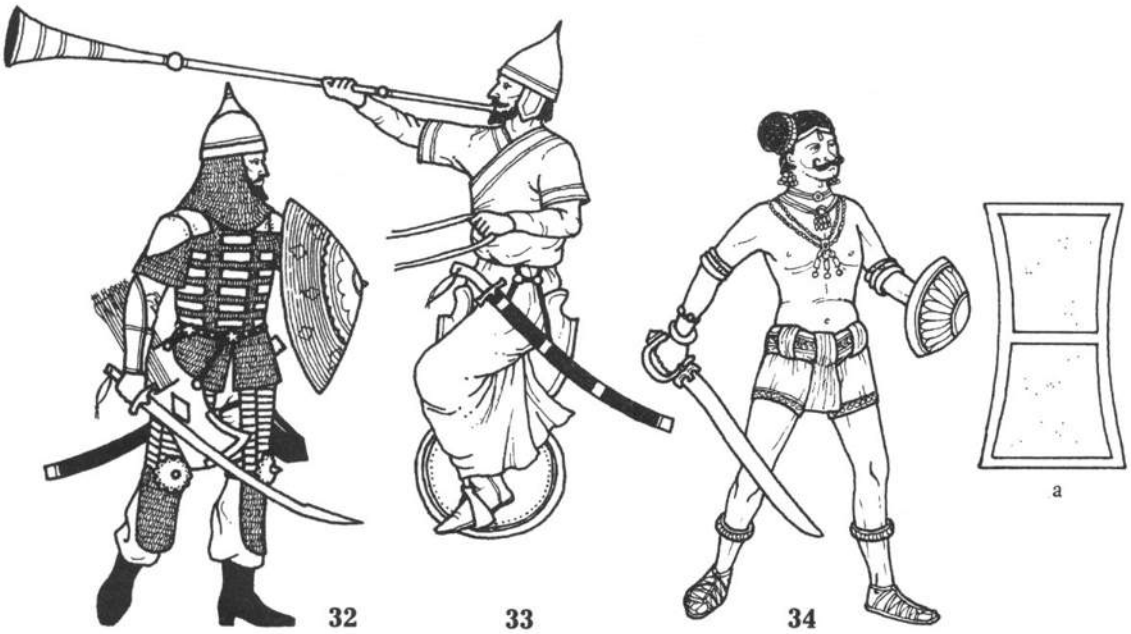
30. PERSIAN CAVALRYMAN c.1440

This shows the final development of the laminated corselet before its disappearance, along with lamellar, during the second half of the 15th century. Reaching only to the waist, it has short sleeves (or sometimes flaps as in 26) and tassets front and back, these last first appearing in the late-14th century. Additional armour comprises a mail hood, helmet with ear-flaps, bazubands, and under his corselet a red jacket with a thick, white lining, with under that a coat-of-mail. The plate corselet is depicted gilded in the original, as are his helmet and the shield-boss, all of which doubtless denote that he is an amir of high rank. He has a blue bowcase decorated in yellow, a black scabbard with gold fittings, a long green tunic, and white boots. His kalkan shield is woven with a white, blue and brown pattern. Note that on his thumb he wears a thumb-ring, used in firing the bow; interestingly another Timurid ms. of c.1410-20 shows characters attending a prince in his court wearing thumb-rings on *both* thumbs, which would tend to confirm the ability to shoot with either hand that is implicit in the lists of different shots given in surviving Mamluk archery manuals. His sword is a *talwar*, a type that first appeared in Persian art in 1306 and found its way into India by the 15th century.

31. PERSIAN CAVALRYMAN, LATE-15th CENTURY

Though a White Sheep Turk, from the province of Herat, this figure could equally well be a Timurid. He wears a gilt-studded red brigandine over a yellow tunic, plus tan leather belt and high-heeled boots (recorded by Barbaro to have been worn by the Persians and Georgians alike; in fact Georgians would have been indistinguishable from Persians). His quiver is black, saddle-flap dark blue, kalkan shield green with iron





boss and gilt studs, and helmet pennon yellow. Such helmet pennons first began to appear in Persia in the first half of the 15th century. Probably of Chinese origin, they seem to have been introduced into both Russia and Persia via the Timurids. Note that the helmet itself is also different from that of the last figure, rectangular iron ear-pieces having now replaced the disc-flaps.

This figure is probably an officer since, although the other figures around him ride unarmoured horses, he rides a horse in a scale bard. In addition he has at his saddle-bow a small, red-rimmed white drum of a type called a *kovarga,* seemingly carried only by officers. Such drums were in widespread use throughout Persia, Turkey, Syria and Egypt. Bertrandon de la Brocquière records how in Syria 'the men of fortune carry with them, when they ride, a small drum, which they use in battle, or in skirmishes, to rally their men. It is fastened to the pommel of their saddles and they beat on it with a piece of flat leather.' Similarly, describing Taj-ad-Din Ibrahim, amir of Karaman, he says he 'had a tabolcan [ie, *tablkhan*] at the pommel of his saddle, according to the custom of the country', and describing Ottoman tactics he says that each horseman (actually only the officers) 'has also on the pommel of his saddle a tabolcan. When the chief, or any of his officers, perceives the enemy who pursues to be in disorder, he gives 3 strokes on this instrument; the others, on hearing it, do the same, and they are instantly formed round their chief'. Arnold von Harff shows a drum being carried in his picture of a typical Mamluk, and the Mamluks' use of such drums is confirmed by Gilbert de Lannoy's account of 1422, which reports that they served in place of trumpets 'to call them together. Besides, when they see their enemies drawn up in order of battle, they sound them all at once to terrify their horses.' He records that Mamluks, Syrians and Turcomans alike carried such drums. Similar drums were apparently also used in parts of Eastern Europe, eg, by the Hussites (see figure 126) and Poles, and probably by the Tartars too.

32. PERSIAN CAVALRYMAN c.1495

There is very little that can be said about the armour worn here that has not already been said under figures 9 and 17, this figure (from an Aq-Qoyunlu 'Zafar-Nama' ms.) merely serving to confirm the similarity of such armour throughout the Middle and Near East, already noted under figure 9. Indeed, it has been observed by a number of modern-day authorities that it is often impossible to distinguish between Persian, Mamluk and Turkish armours unless they happen to carry inscriptions naming known individuals. This type of splint-reinforced armour was even to be found in use in Eastern Europe, as for instance in Serbia, Poland and Russia, its Polish name of *bekhtez* and Russian name of *bakhteretz* both probably deriving from the Persian *bakhta.* That depicted here differs subtly from those already illustrated by the addition of plate shoulder-pieces, presumably similarly attached to the mail.

33. PERSIAN MUSICIAN

The mounted bands that accompanied Persian armies were, like those of the Ottomans and Mamluks,

composed principally of drums and trumpets. In particular Tamerlane's armies used a 7-foot trumpet called a *kourroun* to transmit orders on the battlefield, and it is just such a trumpet that is depicted in this figure, from a Timurid ms. illuminated in Tabriz c.1400. Drummers usually had a pair of kettle-drums (called *kus*) slung one to either side of the saddle-bow.

34 & 35. HINDU INDIAN INFANTRYMEN

Foot-soldiers of the types depicted here provided the bulk of Hindu armies as well as the greater part of the infantry element of India's Moslem armies. They were referred to as *payaks* or *paiks* and were armed predominantly with sword and shield, spear or javelin and shield, or bow and arrows. The sword carried by 34 appears to be an ancestor of the type later called *sosun pattah* ('lily leaf'), widely used in India and Persia. The sword was the favourite weapon of the Rajputs, who liked to indulge in chivalrous battlefield duels. Other arms included knives, sabres and clubs, while handguns were in limited use by the end of this era. The majority of Hindu infantry in Moslem employ were archers, called *dhanuks* (from the Sanskrit *dhanush*). Duarte Barbosa, who visited India c.1500-c.1516, described the Hindu infantry of the Deccan as 'very good archers, and their bows are long like those of England'. Other sources too refer to the 'large straight bows' used by Indian infantry, which were made of cane. Though they did not shoot particularly far they inflicted deep wounds at close range, the barbed arrow-head in addition often breaking off in the wound. In Moslem employ some Indians substituted composite bows.

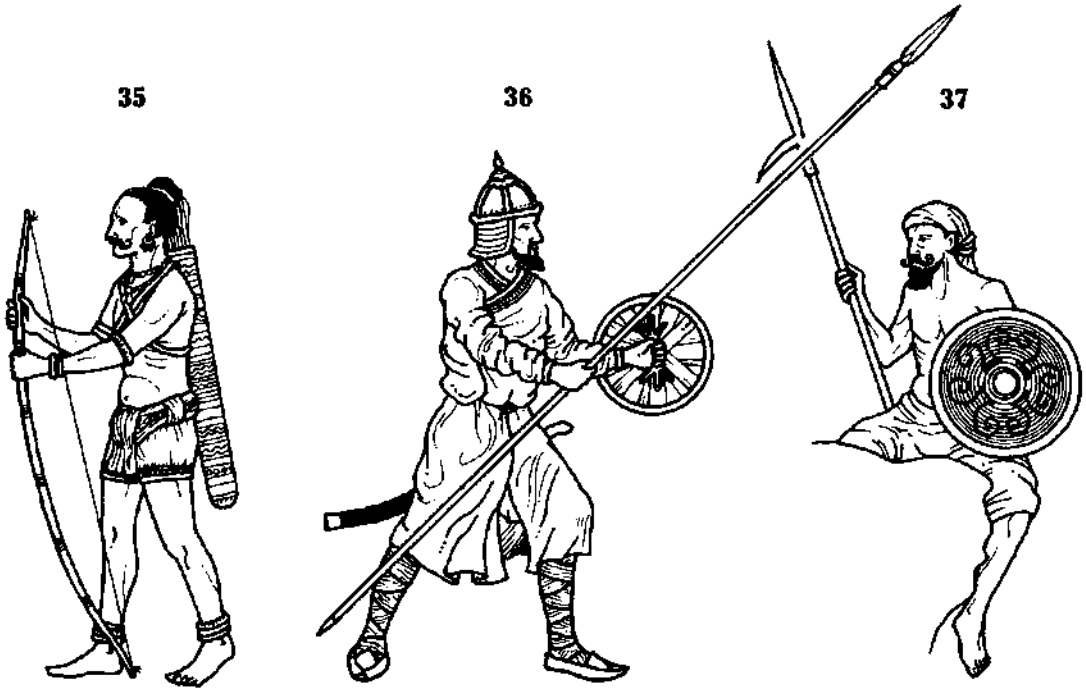
The two figures depicted here give a good idea of the general appearance of Hindu infantry of the 11th-16th centuries. Both are from Vijayanagar, 34 being from the 15th century 'Court of the Horses' in Sri Rangam temple while 35 is from a relief-carving celebrating a victory over Orissa in 1513. Both wear no more than a linen, cotton or silk girdle and shorts, plus light wood and leather sandals in the case of 34, most of the written sources confirming the skimpiness of their battlefield attire (phrases such as 'naked and barefooted', 'nearly naked' and 'bare from the waist up' recurring frequently). Ferishta says quite specifically that the foot-soldiers of Vijayanagar used to enter battle 'quite naked, and had their bodies annointed with oil, to prevent their being easily seized'. Admittedly Domingos Paes, another early-16th century Portuguese visitor to Vijayanagar, saw Hindu infantry who were much better clothed than this, but that was at a royal review of the army in peacetime. He recorded that 'you will see among them clothes of such rich material that I do not know where they came from, nor could anyone tell how many colours they have'. He also mentions 'thick tunics', doubtless the same as the 'quilted tunics' recorded in other sources (see 38), this being the only reference to any sort of armour being worn; under the year 1522 the chronicle of Fernão Nuniz actually says that their shields 'are so large that there is no need for armour to protect the body, which is completely covered', probably alluding to the large rectangular type of shield shown in 34a (from a frieze of c.1268 at Kesava). Abd-er-Razzak in 1442 apparently similarly described Hindu shields as being large ('of cow's hide, large as a portion of cloud' in Elliot's translation, but rendered by others as 'a buckler of ox-hide, which might be mistaken for a piece of mist', a description which could imply either that it concealed its holder like mist or that it was flimsy). The shield carried by 34 is of the smaller variety of buckler often to be found in the pictorial sources. Paes described the decoration of Hindu shields as comprising 'many flowers of gold and silver . . . figures of tigers and other great beasts, others all covered with silver leaf-work beautifully wrought, others with painted colours, others black and [so highly-polished that] you can see into them as into a mirror'.

The bangles (*bangri*) invariably to be seen worn by Hindu soldiers of this period are not always the bracelets that they appear to be, many instead being *chakram* (quoits), which were flat, steel rings of various sizes, sharpened on the outer edge. Barbosa described them as 'steel disks which they call *chacarani* [ie, chakrams], about 2 fingers in breadth, as sharp as razors at the edge but blunt inside. They are the thickness of a small plate, and there is a hole in the middle. Everyone carries as many as 10 of them [elsewhere he says 7 or 8] on the left arm.' To throw one 'they placed it on the [index] finger of the right hand, putting the finger a little round it so as to give it a grasp, and hurl it straight at the enemy. If they hit an arm, leg or neck they cut right through'. It would seem that the Moslem as well as the Hindu infantrymen of Delhi used them.

In Moslem service some Hindu infantry, called *payak-ba-asp*, were issued with nags for transport to the battlefield, though they dismounted to fight. The Moslems, incidentally, considered that the best native infantry were those of Bengal, chiefly belonging to the Hadi, Dom and Bagdi castes.

36. NORTH INDIAN INFANTRYMAN

This figure from Raschid al-Din's 'World History' of c.1306-15, probably copied from a native source, is



fairly certainly an Afghan tribesman. He wears a Tartar-style coat with a cross-over flap, plus puttees (Hindi *patti*), and is armed with a long thrusting spear. Others were archers, armed with composite bows. Afghan cavalry were similarly equipped. though the chieftains and some of their retinues wore mail and lamellar armour that was of Persian design and, often, manufacture.

From the late-14th century until 1506 Afghanistan was held by the Timurids, specifically the dynasty that Tamerlane's son Shah Rukh had established in Herat. As a result many Afghans began to move down from the hills into the territory of the sultanate of Delhi, which the Afghan Lodi dynasty, founded by Bahlul Lodi of the Shahu Khel clan, seized in 1451. Thereafter Afghan troops predominated in the sultanate until its conquest by Babur in 1526, as they did again under Sher Khan and Islamshah in 1539-53.

37. HINDU INDIAN MAHOUT

Indian mahouts are invariably depicted unarmoured in Hindu sculpture of this period, even in battle-scenes, despite the fact that 12th-15th century Persian pictures frequently show armour being worn, while the written accounts repeatedly refer to it. Varthema, for instance, refers in 1504 to mahouts being 'armed with shirts of mail', while Nikitin of Tver, who travelled in India in 1468-74, writes of mahouts 'in full armour'. However, the number of references in the sources to mahouts being killed in battle (see page 78) would tend to refute claims of 'full armour' being worn. My own view is that whereas Hindu mahouts were largely unarmoured, those employed by the Moslems were generally armoured as described and depicted in contemporary accounts.

The particular figure portrayed here, from a battle-scene in Raschid al-Din's 'World History', is typical of the unarmoured mahouts to be found in Hindu art (compare to the mahout in figure 166), his only defence being a cane shield. He wears a white *dhotti* (mahouts seem to have customarily worn white) and a small white turban, which are referred to by Barbosa as being worn by the Hindus of the Deccan and Vijayanagar. Though it seems likely that mahouts were armed in some way — probably with javelins — this figure carries only his elephant goad, which, as Pero Tafur tells us, was used to steer the elephant by pricking him behind the ears, 'for the skin is very tender there'.

38. HINDU INDIAN CAVALRYMAN

This figure is based principally on sculptures in the 15th century 'Court of the Horses' at Sri Rangam, though his cap, described by Barbosa as silk or brocade, comes from an illustrated 16th century ms. He wears quilted body-armour that Domingos Paes' account of c.1520-22 described as 'made of layers of very strong raw leather, and furnished with other iron [plates] that make them strong; some have these plates gilded

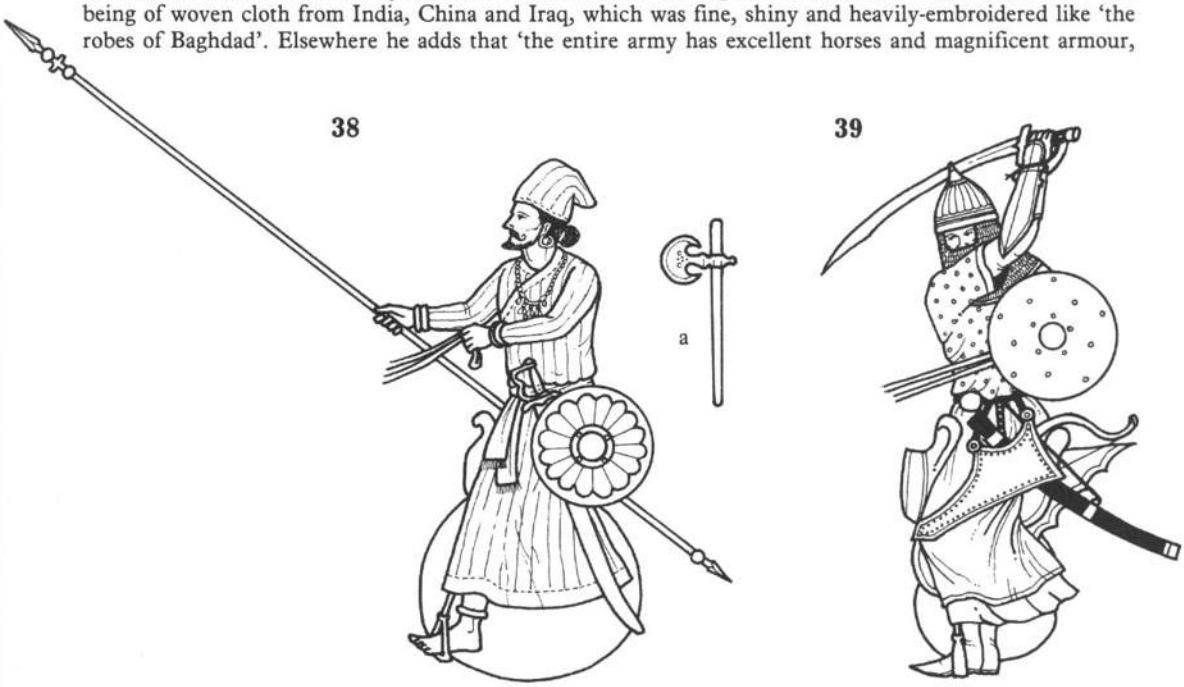
both inside and out, and some are made of silver.' The fact that no plates are visible here would tend to suggest that they were *inside* the corselet, which was therefore somewhat akin to a quilted jack. The word Paes actually uses for the corselet is *laudeis,* probably derived from Kanarese *lodu,* meaning a stuffed cloth or cushion. Fernão Nuniz similarly describes their armour as 'doublets . . . quilted with cotton'. Both he and Paes go on to describe the headgear of Vijayanagar cavalry as 'after the manner of the doublets', ie, padded, Paes adding that they had pieces to protect the neck and face (a hood, perhaps?) plus a gorget 'of silk with plates of gold and silver, others of steel as bright as a mirror.' Despite these references to armour, however, it is significant that Hindu sculpture frequently portrays completely unarmoured cavalrymen, sometimes even bare-chested and wearing only trousers and a cap.

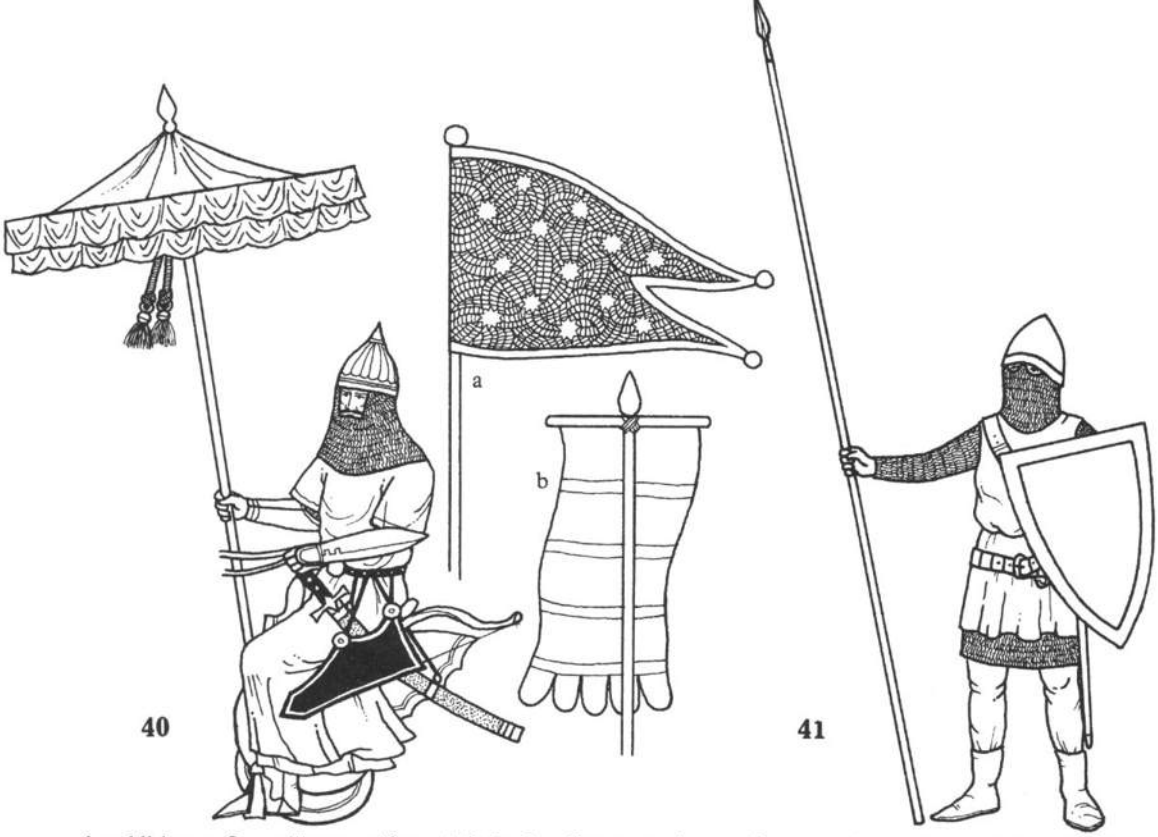
Cavalry weapons comprised lance, javelins, sword, and sometimes a small axe at the waist (38a), in addition to which a proportion at least, used in a scouting capacity, were armed with a composite bow, an Asiatic-style quiver then being attached to the saddle (see figure 160). Popular clothing colours amongst Hindu nobles included red, scarlet, pink, rose, saffron and blue.

39. MOSLEM INDIAN CAVALRYMAN c.1400

Barbosa describes Moslem cavalry of Delhi, Gujarat and the Deccan as riding high-pommelled saddles and wearing mail corselets or 'short jackets quilted with cotton'. He says each man was armed with a long, light lance which had a '4-sided iron head a cubit long and very strong', 2 swords ('each with its dagger'), 2 or 3 Turkish bows with 'very long arrows', plus sometimes a steel mace and battle-axe, 'so that every man carries arms enough for 2'. In addition he records that they 'carry strong round shields covered with silk', doubtless kalkans (see note to figure 27). The cavalry of Delhi he particularly regarded as being 'very strong and good archers', while he noted that those of the Deccan 'fight tied to their saddles' and, along with the Moslems of Gujarat (and presumably Delhi), made 'much use of whips' when riding, which would imply that they did not have spurs, even though at least one source (Qalqashandi) records that they did.

Basic costume comprised Tartar coats, Islamic coats from Khwarizm, small turbans, 4-cornered hats, trousers and tunics of silk, cotton, cloth of gold and camlets (a mixture of silk and wool), plus knee-length boots of thick leather and silver and gold belts. Some of the coats had gold-embroidered tiraz bands on the sleeves, while the coats of the nobility were usually of heavily-embroidered gold brocade (briefly banned under Firuz Shah Tughluq as 'unlawful'). In addition the saddles of the nobility were decorated, as were their swords, the latter being damascened in gold and silver according to the rank of their owners. In the mid-14th century al-'Umari says that the 'Turkish slaves' (ie, the mamluks) of the sultan of Delhi's army were issued with 4 uniforms a year, those worn in winter coming from Alexandria, those worn in summer being of woven cloth from India, China and Iraq, which was fine, shiny and heavily-embroidered like 'the robes of Baghdad'. Elsewhere he adds that 'the entire army has excellent horses and magnificent armour,





in addition to fine military uniforms.' Qalqashandi too mentions uniforms, and records in addition that the soldiers of Delhi wore their hair plaited with silk tassels.

The figure illustrated here comes from a picture dating to 1436 depicting the Battle of Delhi in 1398. His armour comprises an iron helmet with a gilt brow-band, a mail hood, bazubands with extensions to protect the backs of his hands, and a long, green coat of which the upper portion and the sleeves are studded with gilt rivet heads, denoting a plate lining. The tunic he wears under his armour is red, boots are grey, scabbard black with gold fittings, bowcase blue and shield red with an iron boss and gilt rivets. Lances where carried are about 12 feet in length with blue, red, green or mauve triangular pennons. In the original he rides an armoured horse. Persian-style armour was probably introduced into India around the beginning of the 14th century, its evolution thereafter following a similar course.

40. INDIAN PARASOL-BEARER

In this period as in earlier centuries Indian kings, and in the Hindu kingdoms noblemen too, were accompanied in peace and war by a parasol-bearing attendant, even in the midst of battle. The Hindus called the parasol a *chatra*, and amongst them the ownership of a white parasol was the exclusive privilege of a king. They were usually of silk or velvet decorated with pearls, precious stones and gold tassels, Domingos Paes describing the 2 parasols of state belonging to Krishna Devaraya of Vijayanagar as 'all gilded and covered with crimson velvet', adding that on hunting expeditions a blue parasol was carried. Barbosa tells us that 'they are so made as to open and shut and many cost 300 or 400 *cruzados*', which we know from elsewhere was the price of a cheap horse. In the sultanate of Delhi only the sultan himself was accompanied by a parasol, whereas amongst the Hindus every nobleman usually had his own. The figure depicted here is based on the same source as the last and carries a gold parasol.

Persian, Mongol and Timurid commanders were also accompanied by a parasol, at least for ceremonial processions, as too were Mamluk sultans. That of the last was called 'the dome and the bird', being of yellow silk embroidered in gold and surmounted by a gold-plated silver bird.

Although such parasols clearly served as a sort of standard, more conventional flags were also used in India. In the sultanate of Delhi the army's flags were black on the right wing and red on the left, all apparently with gold stripes. The sultan's own flag was also black, al-'Umari telling us that 'nobody can possess the

black standard except him'. That of Qutb ud-Din (1316-20) was charged with a new moon, dragon or lion device, that of Mohammed ibn Tughluq (1325-51) a gold star at its centre, and that of Firuz Shah (1351-88) a dragon. The flags of the last were of such a size and weight that they had to be carried on elephants and could be seen from a considerable distance. The nobles too had flags, khans under Mohammed ibn Tughluq having 7 (or 'almost 9') and amirs 'at least 3', maliks therefore presumably having 5. The *tug* horse-tail standard described under 15 was also in use. Hindu army flags were similar to those of the Moslems, 40a depicting a star-embroidered Vijayanagar flag from a temple fresco of c.1400 at Kanchi. The older style of elephant-standard described under figure 95 in *Armies of the Macedonian and Punic Wars* may also have survived until the very beginning of this period, 40b showing a green one from a 12th century painted box. The Hindus of Vijayanagar at least used horse-tail standards, both white and coloured.

41 & 42. CILICIAN ARMENIAN MEN-AT-ARMS, 14th CENTURY

Cypriot influence was extremely strong in 14th century Cilicia. King Hetoum (1294-1305) was particularly pro-Frankish and his sister was married to Aimery de Lusignan, the king of Cyprus' brother, whose sons Bohemond and Jean later became count of Corycus and *Cunstabl* of Cilicia respectively, the latter even ruling the country briefly in 1341. When the last of Hetoum's dynasty was murdered it was another Lusignan, King Hugh IV of Cyprus' nephew Guy, who the Armenians chose to succeed him in 1342 as Constantine III. The very last king of Cilicia, Leon VI, was also a Lusignan. However, other than King Peter of Cyprus' piratical crusading ventures of 1361 and 1367 against the Turkish-held Cilician ports of Antalya and Ayas (Chaucer's Satalye and Lyeys), no material aid was received from the rest of Christendom, and the last remnants of the kingdom of Cilicia were finally extinguished by the Mamluks in 1375.

As explained under figures 16-18 in *Armies and Enemies of the Crusades,* French influence in arms and military organisation had come to predominate in the course of the 12th and 13th centuries, a trend which continued during this period, as witnessed by these figures. 41 comes from a Cilician ms. of c.1320, other mss. showing men-at-arms even more like Western European types though almost invariably depicting armour that was really 30 years or more out of date. Seemingly open helmets were the norm, and mostly straight swords were carried, though some are depicted very slightly curved like those of the Mongols (see, for instance, figure 147). Figure 42 comes from a French edition of 1375 of the 'Fleur des Histoires de la Terre d'Orient' by Hetoum, prince of Corycus, written in 1307. He wears a mail corselet, a light-coloured surcoat, leather gauntlets, a bascinet with movable visor, and greaves over red hose. Turkish costume and equipment was also popular by this time, as too had been that of the Mongols in the early part of the century. Native infantry would have continued to resemble figures 15 and 16 in *Armies and Enemies of the Crusades,* supplemented by Frankish foot-soldiers hired in Cyprus.

43. KNIGHT HOSPITALLER, 14th CENTURY

This figure, from the grave effigy of Fra Bernat de Foixa (d.1382), depicts characteristic — if somewhat incomplete — 14th century Western European armour, which is fully described in volume 1. It is unusual

45

46

47

for the forearms to be unarmoured by nothing more than mail by this late date, but it is interesting to see that the earlier prohibition of mail mittens with separate fingers had by this time been relaxed. His jupon is red with a white cross (as would have been his shield), the battle-dress of brethren of the Order, while the cloak round his shoulders would have been black, again with a white cross (see 45); the cloak would not have been worn in action. For the probable appearance of a Hospitaller man-at-arms at the very beginning of this period see figure 26 in *Armies and Enemies of the Crusades.*

44. KNIGHT HOSPITALLER 1480

This figure is taken from the c.1490 ms. edition of the 'Relation du Siège de Rhodes' of William Caoursin, Vice-Chancellor of the Order at the time of the Ottoman siege of 1480. The sort of armour and tabard depicted had come into widespread use by the 1440s (compare, for example, with figure 12 in volume 1). It comprises a Milanese armour complete with arm and leg-harness and sallet, but without epaulières, pauldrons or tasses and with couters of only modest proportions (ie, a relatively light harness ideal for foot rather than mounted combat). It is apparent from several sources that on shipboard even lighter armour was worn, the leg-harness at least and possibly the arm-harness too probably being abandoned for ease of movement, as was sometimes also done in the defence of castle walls (Grand Master Pierre d'Aubusson himself suffering leg-wounds during the defence of Rhodes). Several such Rhodian armours as that depicted here were brought back to England from Turkey in the mid-19th century.

According to some the Grand Master's own armour in 1480 was gilt, but the only indication of this in the Caoursin ms. is a dagged, gilt edging to his mail corselet. Indeed, d'Aubusson had himself put a stop to the use of decorated, inlaid armour and silk brigandines amongst the brethren of the Order (a trend which had been on the increase ever since the late-13th century), so it is highly unlikely that his own equipment would have been particularly ostentatious. One indulgence which he and other senior officers did permit themselves, however, was the use of their own family arms on their shields as explained on page 197. Other brethen carried shields bearing just the Order's arms, some of which can be found in Caoursin's mss., where shields are almond types — extremely uncommon by this late date. Others in the same source are blue with linear decoration in yellow, and though most are held by men who are clearly non-brethren some at least are shown held by men wearing the Order's cross-embroidered tabard.

The tabard, inevitably red with a white cross front and back, was called a *supraveste.* It was the Order's official battle-dress, and was worn by its knights, serving brethren and donats alike, either loose as here or drawn tight at the waist by points tied at either side. Caoursin's pictures show non-brethren wearing tabards of identical style, but usually dark blue or some other colour and heavily embroidered, some of them with inscriptions (like 'S.Iohan') to denote their allegiance to the Order. The woodcuts of the Ulm edition of Caoursin's chronicle, printed in 1496, do not show brethren in tabards at all; instead they have a small cross painted in the middle of their breast and back-plates, possibly in red or some other dark colour in order to show up against the armour.

Weapons depicted in the ms. comprise sword, lance, pole-axe, crossbow and longbow. Handguns are also in evidence, mostly, but not entirely, in the hands of men not wearing the Order's supraveste, which would suggest that most of the Hospitallers' handgunners were hired specialists, which seems quite likely.

45. KNIGHT HOSPITALLER IN HABIT, 15th CENTURY

The Ulm edition of Caoursin's account of the siege of Rhodes provides us with detailed pictures of the Order's habit, which principally comprised a long woollen tunic, a sleeveless mantle, a cap, and a cloak like that of 43. The entire habit was technically black, but at least at the very beginning of the 14th century brown was occasionally worn, and brethren were also permitted to wear bluish grey and dark blue. The distinctive 8-pointed cross was worn only with the habit, not in battle (where the plain cross of 44 was substituted), and remained white in all cases. The cap could be brimmed as depicted here or brimless, and the brim could be turned down to cover the ears. It was black when worn with the habit, but red when worn with the military supraveste. Hair was worn fashionably long, though brethren were still tonsured, but by this date few seem to have any longer worn beards, even though in 1449 the punishment for negligence on guard duty is still recorded to have been the loss of the offender's hair *and* beard.

46. FRA JOHN LONGSTROTHER 1471

John Longstrother — Lieutenant-Turcopolier of the Hospital by 1448, Castellan of Rhodes by 1453 and Grand Commander of Cyprus in 1467 — became Grand Prior of England in 1469 and was made Treasurer of the kingdom by King Edward IV, against whom he subsequently fought at the Battle of Tewkesbury in 1471, commanding an element of the Lancastrian centre. The picture from which this figure is taken is in a ms. of c.1485, depicting the execution of Longstrother and other prisoners after the battle, and is of interest in that the Grand Prior is depicted wearing the black sleeveless mantle of 45 over his armour rather than the red supraveste of 44. This exception to normal practice is probably explained by the fact that Longstrother was fighting at Tewkesbury in the capacity of a secular lord rather than as a bailiff of the Hospital of St John, circumstances under which the wearing of the Order's battle-dress would not have been authorised.

47. RHODIAN GREEK MILITIAMAN, 14th-15th CENTURIES

Taken from Arnold von Harff's chronicle (he visited Rhodes in 1498), this figure probably provides an accurate portrayal of those of the island's Greek population who performed naval service for the Hospitallers through the *servitudo marina* and provided militia when needed, as in 1480 and 1522. Unlike most Frankish overlords, the Hospitallers remained on good terms with their Greek subjects, which has been cited by many modern authorities as a major reason why the Order was able to hold Rhodes against the Mamluks and Ottomans for so long. Normal arms for the Greek militia probably comprised a bow or crossbow, or a spear or javelins, plus a sword.

48. FLAGS OF THE KNIGHTS OF RHODES

48a, from Caoursin's ms. of the 1480 siege, is the banner of the Order, comprising a simple white cross on a red field. It was seemingly about 6 feet deep and slightly less in width. 48b and c show two additional flags from this ms. in which the arms of the Grand Master, Pierre d'Aubusson (or, a cross formy couped gules), have been quartered with those of the Order, 48c having in addition long, red swallow-tails marked with small white crosses. 48b appears to be slightly smaller than the banner of the Order, while inclusive of its tails 48c is about 10 feet in length. As many as 8 flags like 48a appear in a single scene in Caoursin's ms., and as many as 7 like 48b in another. However, there seems to have been only one standard like 48c, and in the ms. illustrations it is always depicted close to the Grand Master.

48d, also from Caoursin's ms., is a vexillum depicting the Crucifixion, one of the three battle-flags (featuring the Virgin, John the Baptist and the Crucifixion) under which d'Aubusson is recorded to have fought in 1480. It is shown held by a brother knight immediately behind the Grand Master, and is blue with a gold border and gold figures. Clearly it was the pre-eminent of the three flags mentioned, since it occurs in the Ulm printed edition of Caoursin's chronicle too, though as a flag rather than a vexillum (48e).

48f is also from the Ulm edition, and differs from 48a by the addition of a long tail. Some banners in this edition bear the 8-pointed cross in place of the more usual plain cross.

48g is the flag of the Langue of Aragon, comprising Aragon (paly, or and gules) impaled with Navarre (gules,

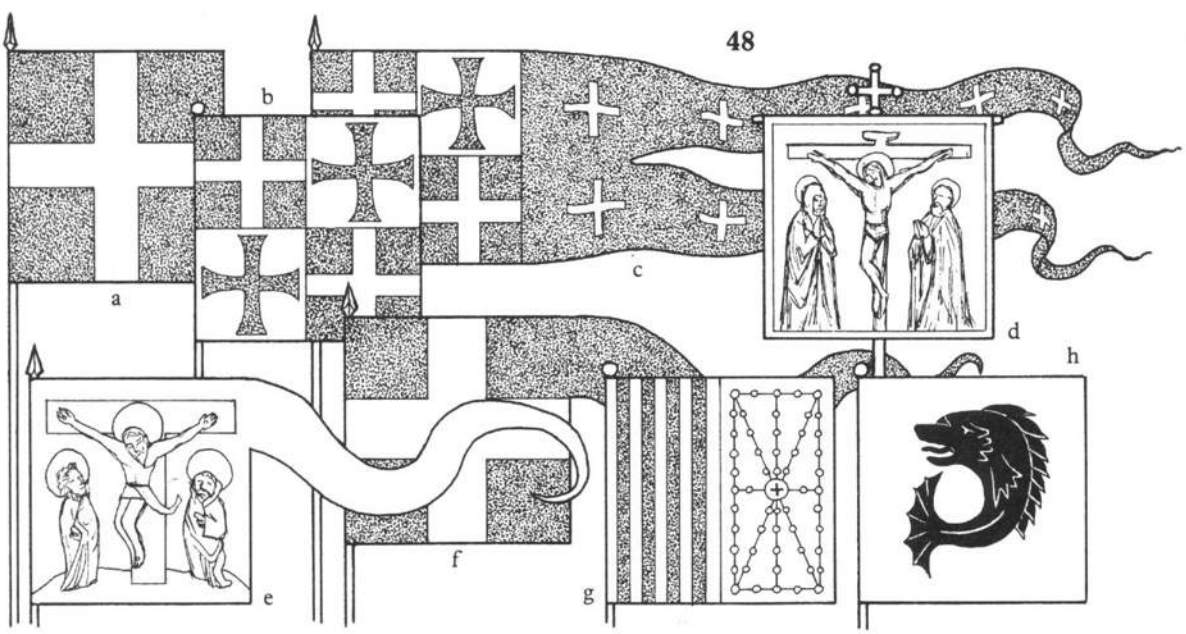
a cross, a saltire and an orle, of chains linked together or, the centre pierced vert), while 48h is that of the Langue of Auvergne, being yellow with a black dolphin. The flags of the other Langues were: Provence, the arms of Jerusalem (argent, a cross potent between 4 crosses or); France, azure, 3 fleurs-de-lis or (ie, France Modern); Italy, black with the word 'Italia' embroidered across it in gold; England, the arms of England; Germany, the arms of Germany (argent, a 2-headed eagle displayed sable); and Castile, the arms of Castile quartered with the arms of Portugal.

49, 50 & 51. BYZANTINE CAVALRYMEN, 14th CENTURY

Despite its archaic appearance, there can be little doubt that this type of armour, which had remained virtually unchanged since the 10th century, still predominated amongst the Byzantines even at this late date — or so we must assume from the complete absence of any evidence to the contrary. Admittedly, however, the majority of surviving 14th-15th century Byzantine paintings of soldiers are religious rather than secular (i.e. they portray military saints such as George and Demetrius), and where they are non-religious they tend to be of historical personages or events, so it is possible that some deliberate attempt may have been made by the artists to introduce classical elements, though the fact that such armour appears in paintings alongside contemporary civilian dress would tend to suggest otherwise. Even as late as the mid-15th century, a fresco painted in the Brontocheion monastery in Mistra, possibly a portrait of Constantine XI, again depicts such armour, complete with pteruges and breast-band (see 57). The Byzantines' continued use of such obsolescent equipment, demonstrating their innate inability to move with the times, may very well have been a major contributory factor in, or else a symptom of, their military decline.

49 is based on sources of the end of the 13th and beginning of the 14th century and depicts a type of armour that seems to have flourished during the period c. 1290-c. 1330. It differs from the more usual Byzantine style of armour, such as depicted in figures 50-52, mainly in the addition of a sort of waistcoat, buttoned down the front, and an upstanding collar of small rectangular laminae which presumably indicates that some sort of coat-of-plates is worn beneath the leather (?) corselet concealed by the waistcoat. The latter must have been quilted — it is otherwise difficult to understand its importance. Pteruges remain very much in evidence, however, and the legs and arms remain characteristically unarmoured.

50 and 51 are more typical Byzantine soldiers, both dating to the mid-14th century. Figure 50, from a fresco depicting St Demetrius, wears a hip-length mail corselet, with an officer's sash tied round his chest, and is armed with lance, shield, sabre and bow, the last two being added from a Thessalonikan ms. of the same date; note the non-Asiatic style of the bowcase, this being the shape depicted in virtually all Byzantine and Serbian pictures of this period. There would have been a quiver hanging at the right, of the type shown in figure 69. The shield is of a shape frequently to be found in Byzantine art, being long with almost straight sides; it would have been slung behind the back by its guige-strap when the bow was in use.



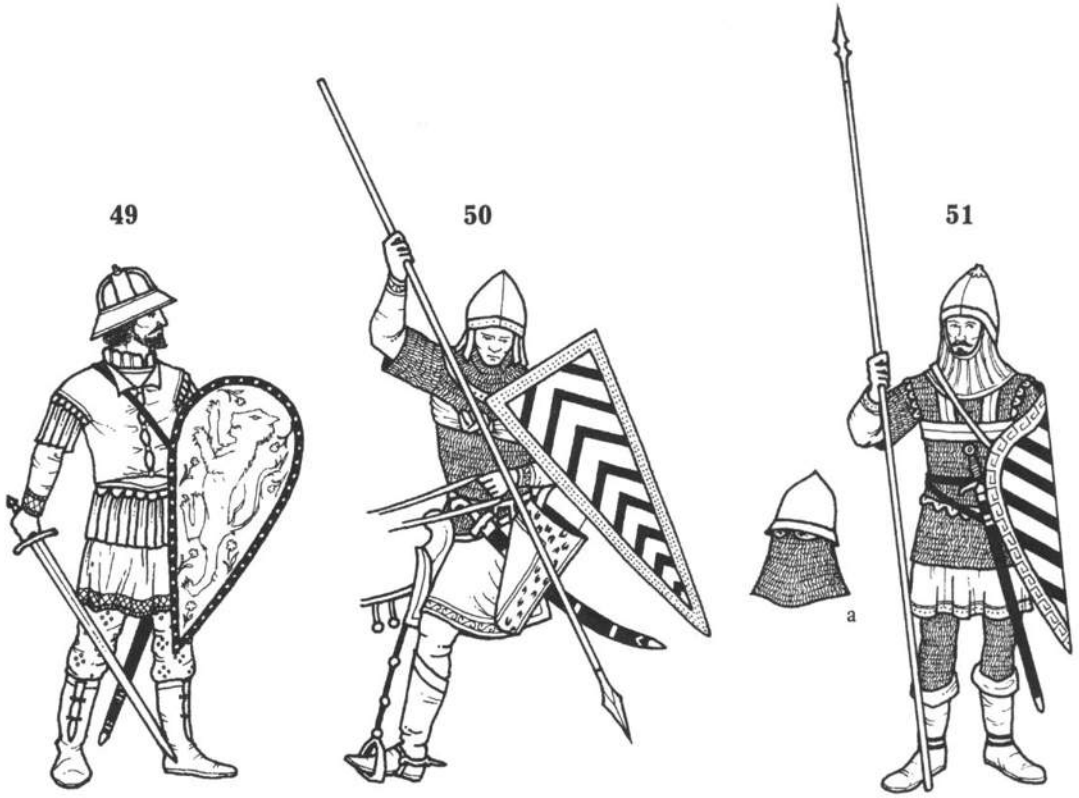


Figure 51 is taken from a 'Romance of Alexander the Great' ms. that probably dates to c. 1360. In addition to a mail corselet, with leather fringes at shoulder and waist plus leather breastband and shoulder reinforcements, he wears scale or mail chausses (probably an indication of Frankish influence) which covered the feet too and could be worn with or without the boots. Strangely, similar armour for the forearms is not in evidence in this particular source. His coif is of quilted fabric or leather, though others substitute mail or scale hoods. This is about as heavy as Byzantine armour seems to have got during the 14th century, though interestingly just one figure in the ms. adds a scale hood that covers his entire face except for the eyes, as depicted in 51a. Others wear equipment virtually identical to that of 50 and 52, with or without pteruges at waist and/or shoulder, and some substitute quilted or lamellar corselets (the latter sometimes over a mail haubergeon), or even studded armour that is presumably of brigandine construction. Shields are circular or almond-shaped, usually either painted some solid colour (most often red) or else in red-and-white or blue-and-white stripes or chevrons, seemingly common Byzantine practice at this date (see also figures 50 and 52). Basic cavalry arms in this ms. are invariably depicted as lance and sword or sabre, though it is clear from several of the miniatures that officers carried a mace now as in earlier times.

52 & 53. BYZANTINE INFANTRYMEN, 14th CENTURY

Figure 52, from a Bulgarian mural at Zemen, dates to c.1354-60. He wears a coat-of-mail with leather pteruges over a tan quilted leather corselet, plus an iron helmet and a mail coif. His tunic is red, trousers are unbleached wool, and boots are red-brown. The shield, bearing a similar (but inverted) pattern to that of 50, is white and blue. The fact that his tunic is red is significant since this had always been the predominant uniform colour of the Byzantine army, and Gregoras still refers to Byzantine uniforms in the mid-14th century. Pseudo-Codinus' 'Book of Offices' of similar date says that Vardariote guardsmen wore red (plus, on ceremonial occasions at least, a Persian or Turkish hat edged in yellow), and that the Tzakones wore sky-blue with 2 white lions face-to-face on breast and back. The Kortinarioi too wore red, with black boots and assorted leggings.

Idris al-Bitlisi, writing in a military context, also stated that in Orkhan's time 'the Greeks . . . wore scarlet woollen garments and red, yellow and black caps'. The 'Romance of Alexander the Great' ms. mentioned above invariably depicts uniforms red or blue, with boots red, brown or black.

53, from the 'Alexander' ms., is taken from one of several miniatures depicting bodies of archers lined up

ahead of cavalry units. Only one group is depicted shooting from inside its shields as here, but that is enough to confirm that by this date the Byzantines must have shot from the right of the bow, probably using the Moslem thumb-lock, doubtless as a result of Turkish influence. The bow itself is of composite construction. He wears a quilted corselet that is possibly plate-lined, plus a mail hood and a *kapalin*-type helmet with a neck-guard of leather lappets.

54. VARANGIAN GUARDSMAN, 14th CENTURY

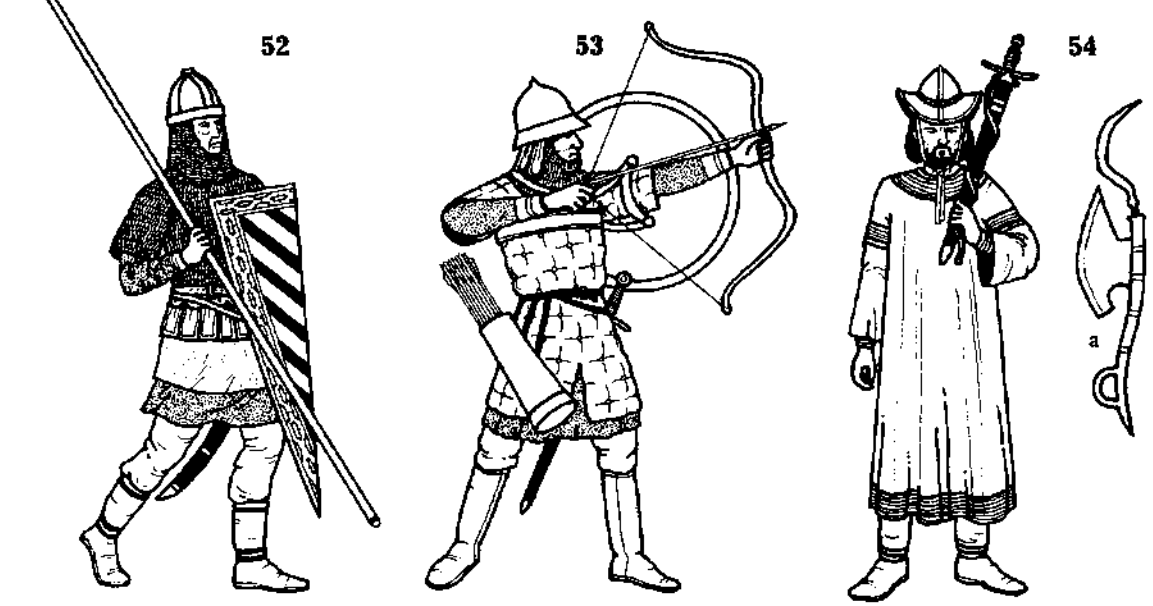
This figure is based chiefly on the last known contemporary picture of a Varangian, a ms. illustration of c.1370-75 depicting John VI Cantacuzene (1341-54) at an ecumenical council of 1351, surrounded by his guardsmen, of whom 8 are visible. In his own 'Historiae' Cantacuzene wrote of 'Varangians with their axes' under the years 1316, 1328, 1330 and 1341, and though he wrote after 1354 it would seem that Varangians with axes were still well-enough known to require no further explanation. However, they appear to have performed only palace and ceremonial duties by the mid-14th century (see page 18). This figure appropriately enough wears court dress, composed of a blue uniform, probably with gold embroidery, and a boat-shaped white hat with gold trim that was typical of 14th-15th century court functionaries. Some details, such as the knotted gold cord chinstrap, are added from 15th-16th century Greek icons. On his shoulder he carries the Emperor's black-and-gold hilted sword in a red scabbard.

54a is from a Palaeologian-period seal of the Grand Interpreter of the Varangians. Despite its somewhat unorthodox shape, Sigfus Blöndal claims that this is the axe of a Varangian; other authorities, however, consider it to be the symbol of a lictor.

55. BYZANTINE CAVALRYMAN 1439

This figure is based on a medallion of John VIII Palaeologus executed by Pisanello in 1439, and portrays the somewhat Turkish appearance of many Byzantine soldiers that is recorded in other sources. As early as 1403-4 Clavijo observed that 'as to their soldiers and warlike arms, the Greeks make use of the sword and the bow, the like of what arms the Turks employ, and they ride after the fashion of these last' (ie, with a short stirrup), and although Clavijo was referring specifically to the Trapezuntines (see below) it is significant that Brocquière, visiting Constantinople in 1433, recorded one of the Emperor's brothers and a score of other horsemen practising horse-archery in Turkish fashion in the Hippodrome (in fact, from his description they were performing *qighaj* exercises, shooting at a ground target). He says: 'This exercise they had adopted from the Turks, and it was one of which they were endeavouring to make themselves masters.'

Colour notes appended by Pisanello to his sketches of the Emperor apparently describe his costume as comprising a green damask coat, crimson tunic, white *kamelakion* hat with a black-edged, turned-up red brim, pale yellow leather boots, and quiver, bowcase and scabbard all ashen-grey. Sphrantzes provides



another description of such an outfit, presented to him by Despot Constantine (later Emperor Constantine XI) during the campaign against Venetian-held Patras in 1429; he describes it as a 'double green tunic lined with fine green linen from Lucca [ie, probably some form of quilted doublet], a red hat decorated with gold, silken lining from Thessalonika, a heavy, gold-coloured kaftan from Brusa [in Turkey], a green coat, and a finely-worked sword.' Since this was whilst on campaign, it was obviously not intended as court dress, but rather as functional combat-dress.

56. BYZANTINE MILITIAMAN 1453

From a Moldavian fresco of 1537 depicting the fall of Constantinople, this figure doubtless represents a militiaman raised from the city's population. These Pero Tafur described in 1437 as 'not well-clad, but miserable and poor', so whatever arms and armour they had would probably have been drawn from the city arsenals. Leonard of Chios describes the militia as 'men of peace, using their shields and spears, their bows and swords, according to the light of nature rather than with any skill. The majority had helmets and body-armour of metal or leather, and fought with swords and spears. Those who were skilled in the use of the bow or crossbow were not enough to man all the ramparts, and had to do the best they could'. The least well-equipped were armed only with slings, Doukas recording slingers repulsing the Ottomans from that part of the walls where 'the Emperor and all his Greek troops were concentrated'.

This figure is one of 7 such in the fresco, all dressed indentically in red tunics, pale grey trousers and red boots, though not all of them wear the hat, which is shown as both red and pale blue. 4 of them are shown armed with composite bows, one accompanies the Emperor, and the other 2 are depicted discharging guns from the city walls.

It can be assumed that the Byzantine defenders of Constantinople included some handgunners too, even though none of the contemporary sources except Doukas seem to mention handguns amongst the Greek soldiers' armament. (For Doukas' references see page 22.) The majority of the handgunners present amongst the defenders were in fact provided by Italians — we are told, for instance, that the Bocchiardo brothers had provided their men with 'fearful guns, and crossbows'. It is no surprise, therefore, to find in the 'Ordo Portae' that the Byzantines called the handgun *skopeta*, a corruption of its Italian name of *schioppetto**.

57. BYZANTINE IN FULL ARMOUR, 15th CENTURY

This is an hypothetical reconstruction of one of the best-equipped Byzantine troops as they might have appeared in the 15th century. The body-armour, sword and shield are from the Brontocheion fresco in Mistra mentioned under figure 50, while the European-style arm and leg-harness are added on the supposition that by this late date even the ultra-conservative Byzantines are likely to have adopted them from

*This term derived from the Mediaeval Latin *sclopus* or *sclopitus*, meaning 'a clap' or 'a detonation'. At first it signified guns in general, but soon came to mean handguns in particular.

their Italian neighbours in Greece and the Aegean. That plate leg-armour at least was worn is confirmed by Pseudo-Sphrantzes' reference to Emperor Constantine's body being identified in 1453 by the golden imperial eagles stamped on his greaves. Certainly such equipment more readily fits 15th century Byzantine references to 'heavily-armed Romans' with 'helmets, breastplates and suits of armour' than does the relatively light equipment of figures such as 50-53.

58. ALMUGHAVAR MERCENARY c. 1302

The original Almughavari were Valencian and Murcian mountaineers, but those who entered Byzantine service in the 14th century (called *Amogavaroi* by the Byzantines) were somewhat more cosmopolitan, including Spaniards of all sorts and even some Frenchmen, though the majority remained Catalans as before. The name Almughavari is probably Arabic in origin, and is best translated as 'raiders', 'skirmishers' or 'light troops'.

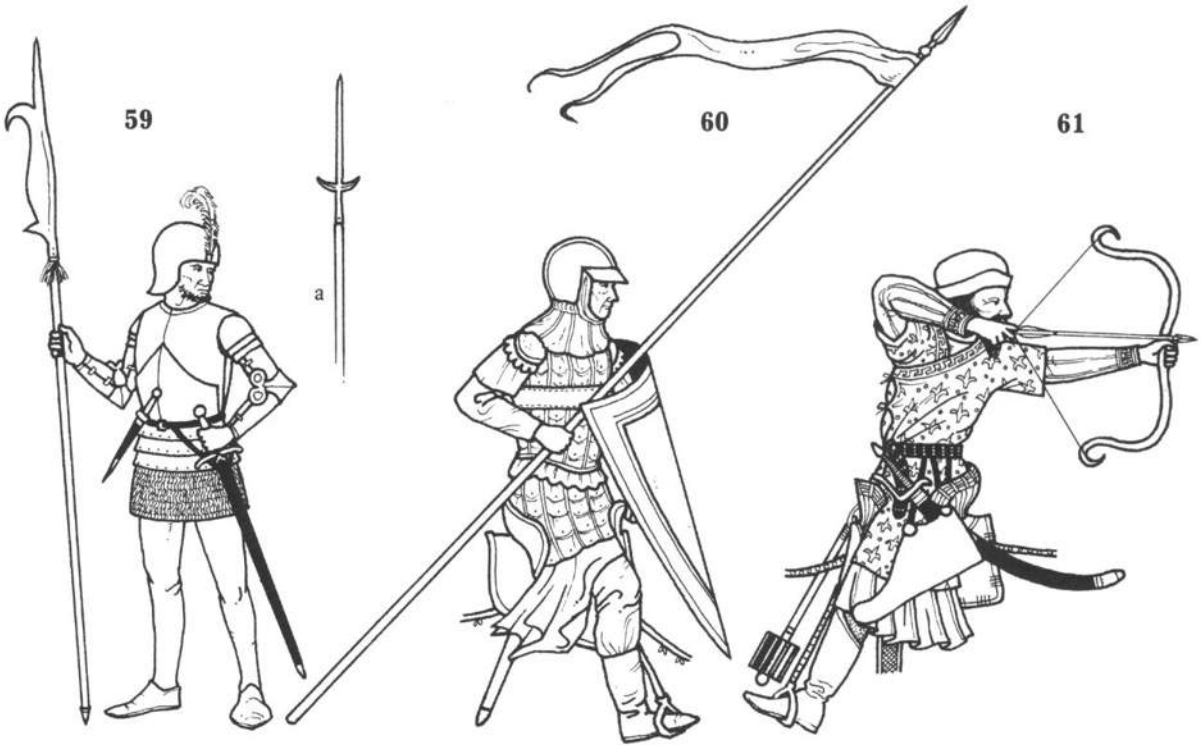
Their costume comprised tunic, short fur jacket, leather leggings, coarse shoes (*scarponi*, leather or possibly hempen sandals), and a leather cap, plus a scrip-bag slung across the shoulder containing as many small loaves as the anticipated number of days in an expedition. Complexion was swarthy, hair long and black, and beard wild. Arms consisted of javelins, a stout, broad-bladed spear and a short sword called a *coutell catalanesc*. The spear was long enough that it needed to be broken short for close-fighting, as Muntaner's chronicle confirms (see volume 1 for this practice in Western Europe). Normally no shield was carried nor any armour worn, though Francisco de Moncada, an early-17th century historian, refers to 'an iron network worn on the head like a helmet', perhaps meaning a mail cap or hood. He also says that 'usually 3 or 4 throwing darts' were carried, while other sources speak of just 2. These javelins were called by the name *azagaya*, a Berber word which via Spanish was to become assegai; they could penetrate mail or helmet at close range and were also sometimes used as stabbing weapons. Moncada says 'they hurled these darts with such speed and violence that they challenged armoured men and horses'. We see the effectiveness of this combination of weapons in an episode recorded by Muntaner, where a single Almughavar officer discomfitted 5 mounted French men-at-arms. Of these he killed the first with a javelin in the chest; brought down the horse of the second with his spear (pinning down its rider, whose throat he cut with his knife); killed the third with his other javelin; disabled the fourth by breaking his jaw with a well-aimed stone; and brought down the fifth by spearing his horse after first wounding the rider in the thigh.

The Almughavari chiefly fought on foot, but in their successes against the Byzantines in 1305 they captured enough horses to enable many to ride to battle, though Muntaner confirms that 'when it came to the attack, a great many . . . dismounted from their horses, for they were bolder on foot than on horseback.'

59. ITALIAN MERCENARY, 15th CENTURY

The armour of this mid-15th century figure is typical of that likely to have been worn by at least the Genoese, Venetian and Cretan elements, and probably the Catalans too, of the 'foreigners' who fought in defence of Constantinople in 1453. We know, for instance, that 3-400 of Giustiniani's men were 'in full armour' but, fighting on foot as they were, and from behind battlements, this probably meant that they wore armour only on their heads, torsos and arms, leaving their legs unarmoured as here; one source (Pseudo-Sphrantzes) actually reports that Giustiniani himself was wounded 'on the right leg, near the foot', though others say he was wounded in the hand (Doukas and Chalkokondyles) or upper arm (Pusculus) by a cannon shot, by an arrow in his exposed armpit (Leonard of Chios), or in the chest by a crossbow bolt or a handgun shot that pierced his breastplate (Kritovoulos and Tetaldi). Interestingly the composite picture we can build up of his armour, based on these wounds, tallies remarkably well with that depicted here. Leonard of Chios mentions elsewhere that 'Giustiniani and his men, since they were fully armoured, sustained no injury from the arrows or other missiles', and describes their equipment as 'bright and gleaming'. That the Venetians at least were also armoured as depicted here is confirmed by Tetaldi, who tells us that some were captured while removing their armour to swim out to their ships after the city had fallen.

Various eye-witness accounts tell us that in 1453 they were armed with crossbows, spears and javelins, handweapons and, as we have already seen under figure 56, handguns. The weapon actually carried by the figure depicted is a bill, popular in 15th century Italy where it was called a *ronco* or *roncone*. (59a depicts a true roncone, or *rawcon*.) Oarsmen, who were usually only lightly armoured or else completely unarmoured (see figure 64 below and figure 80 in volume 1), were probably the throwers of the javelins mentioned by several of the chroniclers; certainly half the oarsmen aboard Florentine galleys in 1445 were armed with javelins (of which each man had a dozen), a practice which they had apparently copied from the Genoese. Others may have been archers and crossbowmen, such as the 200 guarding the Golden Gate under a certain 'Manuel the Genoese'. The Cretans too were undoubtedly crossbowmen since the 300 in Negroponte on its fall to the Ottomans in 1470 were, as too were the 400 in Rhodes in 1522.



We know from Barbaro's account of the siege that the Venetian elements at least were probably distinctively uniformed, though it is not clear in what way.

60. TRAPEZUNTINE BYZANTINE CAVALRYMAN, 14th CENTURY

This figure, from an illustrated 'Labours of the Months' ms. commissioned in 1346 for the monastery of St Eugenios in Trebizond, demonstrates that conventional Byzantine equipment remained in use in the 14th century even in this far-flung corner of the Greek-speaking world. The illustrations in this ms. appear to have been taken from contemporary rural scenes, so he is fairly certainly one of the *strategoi* or *stratiotoi* mentioned on page 24. He wears quilted leather body-armour and coif and still rides with his stirrups long. Note the absence of spurs. Probably such traditional equipment had disappeared by the beginning of the 15th century when, as we have already seen, Clavijo reported the use of Turkish swords, bows and short stirrups.

61 & 62. TRAPEZUNTINE BYZANTINES, 15th CENTURY

The steadily increasing similarity between Byzantine and Turkish costume apparent by the 15th century, referred to under figure 55, is even more apparent in these 2 figures, pictorial sources clearly confirming that whilst traditional Byzantine dress may have been retained for court ceremony in Trebizond, Turkish costume and military equipment were by now predominant on the battlefield.

Figure 61, from frescoes in the church of Hagia Sophia in Trebizond, is one of the Byzantinised Laz or Tzans who constituted a substantial proportion of the Trapezuntine population and armed forces. Similarly dressed figures are to be found depicted in many different churches in the area, some of them portraying the usual military saints that in the Byzantine Empire are usually shown equipped like figures 49 and 50; however, in the Pontos region they are, significantly, mostly depicted unarmoured. His composite bow comes from the same source as figure 62, which portrays Trapezuntine cavalry turning in the saddle and firing backwards Parthian-style as shown here. Clavijo, describing the warband of a frontier nobleman, speaks of them as horsemen 'armed with their bows and arrows'.

Figure 62 comes from a Florentine painted cassone of c. 1462 depicting the fall of Trebizond in 1461, almost certainly based on the descriptions of an eye-witness. The Trapezuntines and Ottomans shown in the original are virtually indistinguishable except for the fact that whereas the Turks all wear turbans, the Trapezuntines wear tall, mostly plumed hats of Georgian origin, of a type which Clavijo described in 1403 as tall, trimmed with miniver, with a gold cord running up the sides and a 'great plume' of crane feathers on top. One or

two are also shown wearing hats like that of 55. Infantry and cavalry are all bearded and dressed alike in long, flowing topcoats, often heavily embroidered, over short tunics, close-fitting trousers and boots, of an unusual open-fronted design in the case of the infantry; note the high heels, such as Barbaro observed being worn in Georgia and Persia too. One foot-soldier is depicted with his coat tucked up into his waist-sash as described under figure 3, and it seems likely that the skirts of these long coats were split at the back anyway, like those of the neighbouring Georgians, since, as Barbaro observed, 'otherwise they could not get on horseback'. No armour or helmets are to be seen anywhere on either side. Their weapons comprise a mixture of composite bow, curved sabre, spear and mace, with the bow and sabre predominating. Six of the 30-odd Trapezuntines in the original have shields, all of them infantrymen, of which all but one are of the shape depicted here. The exception is heater-shaped, other heater shields also being in evidence in frescoes.

Popular clothing colours in Trebizond at this date were scarlet and green. The cassone shows most colours being worn, while 61 wears a white cap (turban?), a black-belted, white-embroidered red coat over a yellow tunic, and yellow leather cavalry boots.

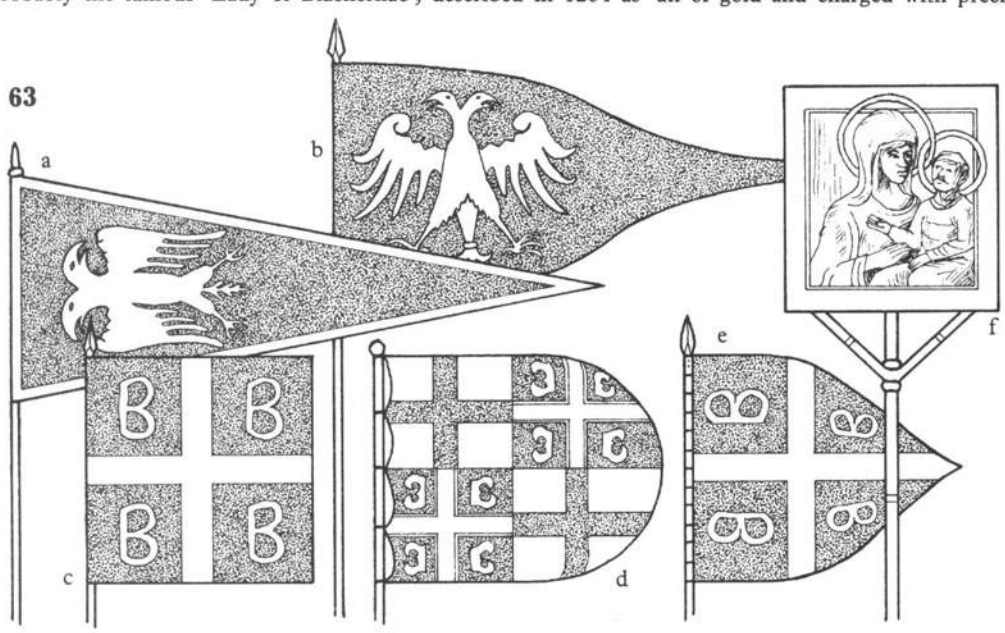
63. BYZANTINE FLAGS

63a comes from a bronze relief of c. 1445 on the doors of St Peter's in Rome depicting a Byzantine galley bringing John VIII to Italy. Possibly it was purple, with the eagle in gold, but most sources depict the field of such flags as red. The eagle device was in use by the Byzantine Emperors at least as early as the 7th century, but Theodore II (1254-58) was the first to officially adopt the double-headed eagle emblem, which represented the dual nature of the traditional Empire with lands in both the East and the West. The Grand Komnenoi, emperors of Trebizond, adopted instead a single-headed eagle, though interestingly 63b, shown flying over Trebizond in Italian maps of 1320/1, has the eagle double-headed; the flag is red, with the eagle in gold.

63e is from a 13th century edition of Villehardouin's 'La Conquête de Constantinople', similar red and gold or yellow flags being found in a large number of 14th century sources, 63c depicting another example of c.1390. A modern authority has suggested that the sideways or upright 'B' symbols were originally crescents but were variously interpreted as broken chain links, steles or the Greek initial letters for the Palaeologian dynasty's motto 'king of kings, ruling over kings', this flag indeed being that of the Palaeologi. As a result of intermarriage the same device also occurs in 15th century Serbian coats-of-arms.

63d, from the 14th century 'Conoscimiento de todos los Reinos', shows a variant of the above, with the Palaeologi arms (here with the cross and 'B' devices edged in green) quartered with a red cross on white.

63f is an icon, from the Moldavian fresco of the siege of Constantinople mentioned under figure 55. It is probably the famous 'Lady of Blachernae', described in 1204 as 'all of gold and charged with precious



stones'. In the fresco it is gold with Mary in red and Christ in orange, both with natural faces and silver halos, within a narrow inline box in red.

64. VENETIAN OARSMAN c.1410

This figure and the next are from a fresco of 1407-10 in the Palazzo Pubblico, Siena, depicting a naval engagement between Venetians and Imperial forces. The fresco indicates that at this date oarsmen generally wore at most only light armour comprised of a helmet, arming-cap and light brigandine or mail corselet. Additional protection was provided by a shield, which was hung along the *telaro* frame of the galley when the men were rowing; 64a depicts such a shield from the fresco, painted red with the winged and haloed lion of St Mark in gold. Similarly decorated oval, heater and small circular shields are also depicted in use in this fresco. The figure depicted here is armed with one of a variety of broad-bladed polearms to be seen in this source, which indicates that they must therefore have been popular shipboard weapons. Others carry spears or javelins instead, and probably most had swords. See also notes to figure 59.

65. VENETIAN CROSSBOWMAN c.1410

A law of the Venetian senate of 1303 says 'the masters of the galleys must hire bowmen [selected] according to the rules made by the councils, 30 for each galley, and they must row the galley *ad terzarolos*'; later it emphasises that among the crew of every galley there were to be 30 such bowmen 'who nevertheless shall be obliged to row'. Even at that early date, however, they might occasionally be exempted from rowing by special licence, and by the end of the 14th century crossbowmen were actually forbidden to take part in any shipboard activity that was unconnected with crossbows. They continued to be called 'bowmen' even after the introduction of handguns, by which time most galleys only carried 20 bowmen (though the Senate ordered 10-20 extra to be taken aboard on dangerous voyages). After 1461 some were officially required to be gunners, 6 per galley being specified in a law of that year, increased to 8 in 1486. Round ships carried considerably less bowmen, perhaps 4-8 on a ship of average tonnage.

Michael Mallett, in *Mercenaries and their Masters,* observed that 'Venetians all learnt to fire a crossbow as part of their civic obligations', so Muntaner's description of Catalan crossbowmen could probably be applied with equal accuracy to those of Venice. He wrote that they were all 'people who can renovate a crossbow, and every one of them knows how to put it together, and how to make the light darts and the bolts, and how to twist and tie the string, and he understands all that pertains to a crossbow.'

The figure depicted here wears a long-sleeved mail corselet (*giacho*), a *celata* helmet, and leather gauntlets. Some other Venetian crossbowmen in the fresco are more heavily equipped in brigandines and arm-harness, but they are all invariably shown with their legs unarmoured.

66 & 67. VENETIAN FOOT-SOLDIERS c.1490

These figures, from episodes of Carpaccio's 'St Ursula' cycle of paintings dating to 1490 and 1493, depict Venetian equipment typical of the period 1460-1500. Figure 66 wears a brigandine (*corazzina*), greaves (*schinieri*) and celata, while 67 substitutes a breastplate (*corazza*) and a red, plate-lined cap called a *beretta di piastre.* Others wear the brigandine over a mail corselet, but that is about as heavy as their equipment seems to have normally got. Arms included pikes, polearms, crossbows and composite bows. The last are to be found in a great many Italian, and particularly Venetian, pictures of the 15th century, the adoption of this weapon on such an unprecedented scale doubtless resulting from Venice's trading links with and territorial possessions in the Balkans and the Near East. Indeed, composite bows (called 'Turkish bows') appear to have heavily outnumbered crossbows in Venetian military service at this date; significantly the contemporary woodcut of the Battle of Zonchio (1499) shows 6 composite bows and even 3 handguns amongst the Venetian seamen, but only 2 crossbows. Note also the yellow leather Turkish-style quiver (*turcassa* — see note to figures 1 and 2). Another weapon introduced from the Balkans was the *schiavona* or Slavonic sword, worn by 66, which was identifiable by its horizontally curved hilt, by this late date accompanied by a knuckle-guard that was lacking from earlier examples. The stradiot sword (*spada alla stradiotta*) was probably this type of weapon. His main weapon is a war-hammer.

Other Venetians, including men-at-arms, would have been indistinguishable from the Italians depicted in volume 1.

68. ALBANIAN CAVALRYMAN, 15th CENTURY

The Albanians were mostly light cavalry armed with sword or sabre ('which is a terrible weapon', says Philippe de Commynes), a mace hung at the saddle-bow, and a lance or *zagaie,* the latter being a javelin 10-12 feet in length with a blade at each end, wielded overarm. Others carried a crossbow or a bow instead. In addition some were foot-soldiers, mostly archers but including some crossbowmen and javelinmen plus peasant levies; by the 1440s some Albanian infantry were even armed with handguns. The costume of the figure depicted here is typical, particularly the characteristic Albanian hat and the hanging sleeves. The latter appear in Byzantine and Albanian pictures as early as the first half of the 14th century, and it was probably from Albania or elsewhere in the Balkans that the Ottomans and Italians copied this fashion, the latter introducing it to Western Europe by c.1430. Such sleeves were actually being described as 'Albanian' by the 16th century. Doubtless they were tied behind the back or stuffed through a belt in battle, as described under 10. Popular clothing colours were scarlet (for the nobility), red, green and blue.

Albanians were to be found fighting for the Venetians by the beginning of the 15th century at the latest. However, after the conquest of Albania by the Ottoman Turks in the 1470s they (and, later, Greeks and Croats) began to appear in Venetian employ in noticeably larger numbers under the name of 'stradiots', this

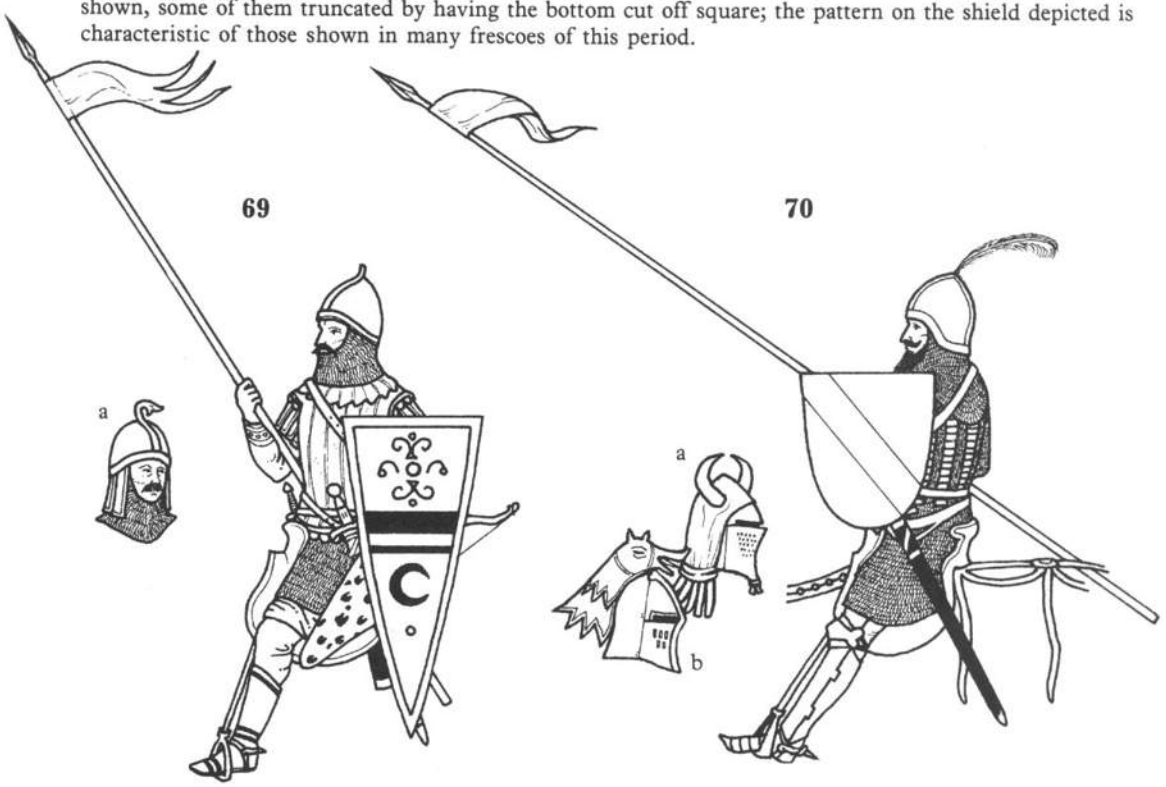
deriving from the Byzantine Greek word *stratiotes,* the term used for a pronoia-holding soldier. (William Miller, however, proposed an alternative origin for the word, suggesting in his *Essays on the Latin Orient* that it derived from Italian *strada,* meaning a road, in the sense that they were wanderers always on the road.) Commynes described stradiots in Venetian service at the Battle of Fornovo in 1495 thus: 'They are horse and foot, and dressed like Turks except that they wear no turbans on their heads. They are hardy people, and lie abroad all the year round with their horses; they were all Greeks, from the places which the Venetians possess in those parts, some of them from Naples and Romania and the Morea, others from Albania and Durazzo. Their horses are all Turkish, and very good. The Venetians employ them often in their wars, and put great confidence in them . . . their number was near 1,500.' He also tells us that their pay took the form of a ducat per enemy head taken, the same pay as was given in 1470 to Serbian hussars in Matthias Corvinus' employ, to whom they were in most respects very similar. Armour where worn comprised no more than a mail corselet (worn under the coat), plus a shield.

Scanderbeg's flag is described by the chronicler Barletius as red charged with a black, double-headed eagle.

69. SERBIAN CAVALRYMAN, 14th CENTURY

In the early decades of the period under review, and to a limited extent even thereafter, traditional Byzantine-style equipment of the type depicted here remained in widespread use in Serbia, the Serbians being slow to adopt the new developments in arms and armour that were gradually infiltrating into their country from the West. In fact modern Yugoslav authorities are generally of the opinion that even after the introduction of the Western European military panoply worn by the next 3 figures, Byzantino-Slavic harness and arms were not abandoned, both types remaining in use concurrently for much of the 14th century.

The figure depicted here is based on two church frescoes, one in the church of St George at Staro Nagoricino, rebuilt by Stephen Urosh II Milutin in celebration of a victory of 1313, and the other executed in 1349, depicting a spirited battle-scene. He wears a quilted (?) cotton or leather corselet over a mail haubergeon, plus a helmet and a mail hood over a fabric gorget resting on the shoulders, similar in appearance to the mail-and-quilt coifs described under figure 80. 69a depicts an alternative helmet from the St George fresco. His shield is of the long, nearly straight-sided Byzantine type. Eastern European almond types are also often shown, some of them truncated by having the bottom cut off square; the pattern on the shield depicted is characteristic of those shown in many frescoes of this period.



Small circular shields were also still in use. Weapons in this instance comprise lance, dagger, sword, and a composite bow in a bow-case at the left hip, together with an Asiatic-style quiver at the right. Serbian cavalry are shown using their bows from horseback in 14th century mss. and are mentioned by Cantacuzene in his chronicle, appearing at the Battle of Velbuzhd in 1330. However, they seem to have generally abandoned the bow by about the middle of the 14th century (but see below).

70, 71 & 72. SERBIAN OR BOSNIAN MEN-AT-ARMS, 14th-15th CENTURIES

The introduction of Western European-style armour into Serbia was an inevitable by-product of the country's heavy reliance on German, Hungarian, Spanish and other foreign mercenaries, whose weapons and tactics they soon adopted to the extent that from the mid-14th century at the latest, until the fall of the despotate in 1459, the better-equipped Serbian men-at-arms would have been largely indistinguishable from their German and Hungarian counterparts, except in that they often lagged somewhat behind whatever contemporary trends prevailed elsewhere in Europe. Considerable quantities of armour were imported from Italy (Venice in particular) and Dubrovnik, that coming from the latter often originating in Germany.

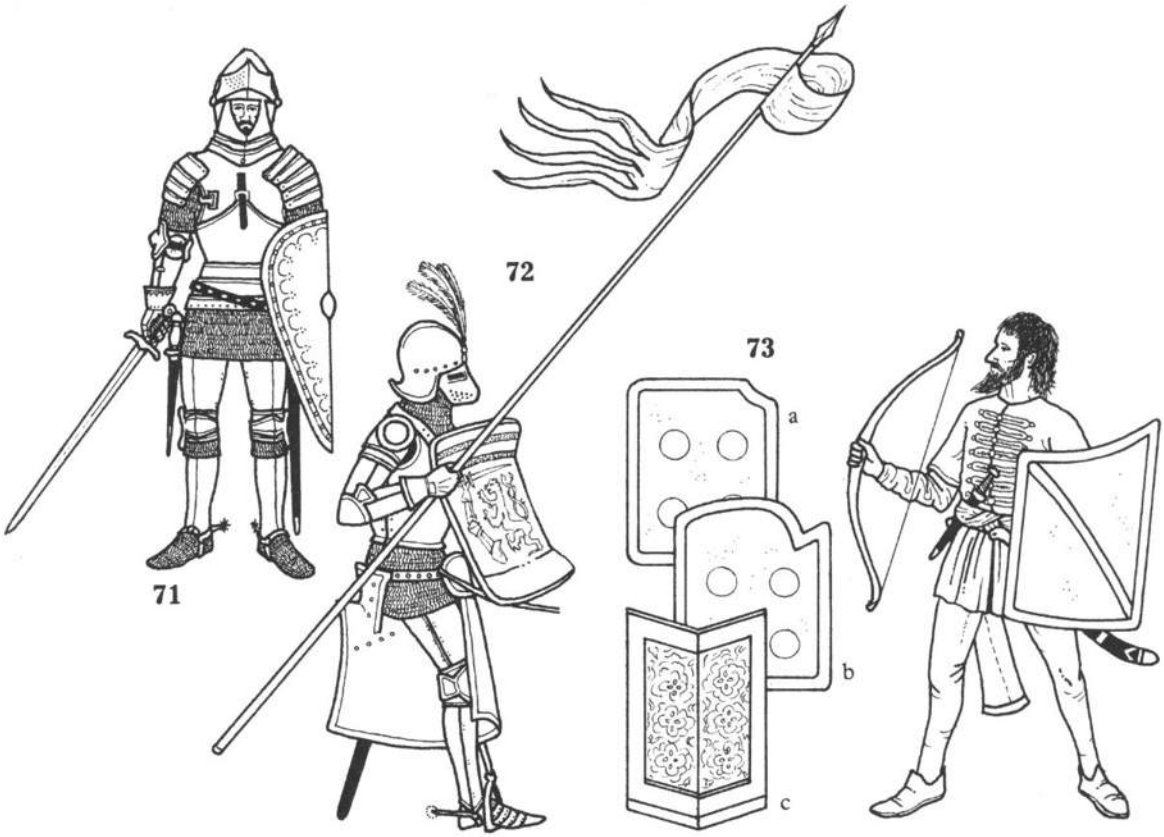
Figure 70 is equipped in accordance with sources of the period 1370-1400, and wears bascinet, corselet, gauntlets and leg-harness. The corselet is in fact a *toya*, made of mail reinforced with iron splints, similar to the Near Eastern types already described under 8, 17 and 32. That mail and mail-based armours at first remained more popular in Serbia than plate would appear to be confirmed by Doukas' description of the Serbian cavalry at Ankara in 1402 as being 'encased in black armour', a phrase which does not lend itself to plate but fits mail rather well. Doukas' description of the battle also implies that the Serbians' armour was relatively comprehensive, since he remarks that the Tartar arrows 'did not manage . . . to inflict much damage' on them, only on their horses. Though the latter were clearly unarmoured on this occasion, other sources state that horses were sometimes barded, horse-armour apparently being purchased principally from Venice. In addition several seals, such as that of King Tvrtko of Bosnia, show horses in housings, sometimes bearing escutcheons of the owners' arms. However, horse-armour would probably have been limited to the very rich, who were in addition recognisable by their 'sparkling' armour and their silver and gilt decorated spurs and equipment. 70a, from the seal of Stephen Lazarevic (1389-1427), depicts a more ornate helm with crest and lambrequin, such as was apparently worn in battle by many Serbian noblemen. 70b, depicting another example, comes from the seal of a minor 14th century despot.

The remaining 2 figures both belong to the 15th century. 71 is from a statue in Dubrovnik erected in 1423, wearing an Italian armour of that date complete with lance-rest, pauldrons, plackart and short fauld of iron hoops. His shield, however, is an old-fashioned almond type. Figure 72, on the other hand, a mid-century Bosnian voivode (Krvoiev Misap), wears harness that is probably of German or Hungarian origin (though it could possibly be of Balkan manufacture), and carries a more modern rectangular shield bearing Hungarian-style arms. In Western Europe, of course, the use of shields by heavy cavalrymen had generally been abandoned by this date, but significantly they seem to have remained in use amongst Balkan cavalry throughout this era, probably in response to the Ottoman Turks' heavy reliance on archery in battle. The helmets of both figures are added from other, Serbian, sources.

Arms generally comprised shield, lance (normally couched but apparently sometimes still wielded overarm or 2-handed in the 14th century), German sword, dagger and mace. Shields were generally either almond or heater-shaped or rectangular, sometimes bouched like that carried by figure 88; in addition the wing-shield described under figures 73 and 92 below was probably carried by some. Some Serbian light cavalry (see 94 and 95) continued to utilise more traditional round shields of silk- or leather-covered wicker with an iron or brass boss, and some of them may have continued to carry a composite or self bow in place of, or in addition to, the more usual lance even in the 15th century; however, if any did, their numbers must have been very small indeed.

73 & 74. SERBIAN OR BOSNIAN INFANTRYMEN

The infantry were mainly armed with spears, long-handled axes or other polearms (particularly bills and rawcons), bows and, later, crossbows, archers and crossbowmen clearly predominating. The foot-soldiers of a Serbian border-lord were described by Gregoras in 1327 as 'clad in black woollen garments . . . They wore no heavy armour, being armed only with spears, battle-axes and bows and arrows.' Others in fact did wear some armour, but in the 14th century rarely more than a helmet and a light toya plus a shield. Figure 73, from Bosnian stecaki of the 15th century, is unarmoured. His arms comprise a yew short-bow (with horn nocks) that had a maximum range of about 200-220 yards, plus a dagger and a sabre (*sabla*), though a sword or a *corda* (a traditional single-edged weapon with its pommel shaped like a stylised bird's head) might be



substituted. The sabre began to be adopted early in the 14th century. Despite Gregoras' reference to 'black woollen garments', principal Serbian clothing colours were apparently red, green and yellow, plus the usual browns, tans and off-whites. Most Serbians, and certainly the nobility, wore beards, and Bertrandon de la Brocquière confirms that they generally wore these and their hair long.

The basically rectangular shield is from a 14th century stecak. This type, which was particularly widespread in Bosnia, undoubtedly evolved from the traditional rectangular Slavic shield (see *Armies of Feudal Europe*); it was later adopted in Hungary, and note 92 should be consulted regarding its subsequent evolution. 73a and b depict two variants from other stecaki, while 73c is another form of angled, rectangular shield to be found in use in Serbia and Bulgaria. Like most Serbian and Bosnian shields, these would have been of light, soft wood faced in iron or painted leather. Other infantry shields were once again either almond-shaped or of the straight-sided, triangular Byzantine variety depicted in figure 50.

74 is a 14th-15th century Serbian crossbowman from a ms. miniature. His armour and equipment is basically Western European in style, with the exception of his crested helmet which is of a traditional Slav design; the quiver at his belt normally held 25 bolts. He is probably a paid regular, some of whom in the 15th century were equipped with handguns in place of bows or crossbows. It has been suggested that the guns fielded by the Serbians at Ankara were in fact handguns, but there is no evidence to support this. The handgun had actually come into common use in Serbia by the 1420s, probably in the hands of Hungarian mercenaries, while the earliest reference to handguns in neighbouring (and usually more progressive) Bosnia dates only to the end of 1436. 74a depicts a Serbian *puzhka* of the first half of the 15th century (note that the name derives from the German *Püchse* or *Büchse*).

75. ROUMANIAN FOOT-SOLDIER, 14th CENTURY

This Wallachian comes from 2 illustrations in the 'Képes Krónika' (for which see figure 85), depicting the victory of Basarab I over King Charles Robert of Hungary at Posada in 1330. There are 20 'Vlachi' portrayed in the originals, of whom 9 wear tall, grey-white sheepskin hats and 7 wear rough sheepskin coats with tubular sleeves, which had either a vent at the elbow or else a hanging flap (the latter admittedly unlikely in such a practical garment). Only 3 wear both the hat *and* the coat. The figure illustrated here wears his over a white tunic with embroidered cuffs, others wearing red or light green tunics. Sandals and grey or tan

trousers, tight at the ankles, complete the costume. Some wear a beard and/or moustache, but this particular man is clean-shaven, and they all wear their hair very long, a Wallachian (and Moldavian) fashion confirmed by other pictorial sources such as the tombstone of Voivode Radu I (c. 1377-83) and portraits of Dracula, Basarab III Laiota and other 15th century princes. It is easy to see from his appearance why contemporaries almost invariably described Roumanian infantry as *rustici* or peasants. Their principal weapon was the composite bow, but others were armed with swords, spears, javelins, maces ('wooden clubs' are recorded being used at Posada), scythes, axes, flails, and some crossbows.

Doubtless the Transylvanian and Wallachian elements of Sigismund's Hungarian army at Nicopolis in 1396 included infantry of this type, since the Religieux de Saint-Denis says that Sigismund recommended the Christian attack should be led by the '40,000 infantry whom he had brought', which advice Schiltberger renders as a recommendation that the Wallachians should open the attack.

76. ROUMANIAN FOOT-SOLDIER, 15th CENTURY

This figure is a Moldavian of Stephen the Great's reign (1457-1504). One source describes the dress of such peasant-soldiers as 'clothes made of a dark-coloured, coarse, hairy stuff, conical fur caps, and *opinci* [sandals]', adding that since they were 'armed only with spears and scythes, they run through forests and over mountains with incredible swiftness.' Nicolae Costin in 1467 also refers to their weapons as comprising 'scythes, spears and axes', but it is clear from other evidence that the majority of Moldavian infantry were actually archers. As early as 1395 Stephen I's army is described as including 'a great multitude of archers' and in 1476 the greater part of Stephen the Great's army comprised rustici armed with bows, swords and spears. Jan Dlugosz even stated that if Stephen 'found a peasant without arrows, a bow and a sword, he ruthlessly condemned him to be beheaded.' A few had crossbows and there were also some Roumanian infantry with handguns, introduced during the first half of the century.

Armour, where it existed at all, comprised at best a shield, mail corselet and helmet. Quilted linen or hemp jackets, padded with wool or cotton to a thickness of about an inch, might also be worn, some contemporary accounts describing such armour as sword-proof. Shields where carried were of wood or interwoven osiers, covered with painted leather. That carried here, bearing the arms of Moldavia (for which see Appendix 1, number iv), is one of the former. These arms had started appearing on Moldavian flags too by the end of the 14th century.

77. ROUMANIAN CAVALRYMAN, 14th CENTURY

Both Wallachian and Moldavian cavalry were principally unarmoured light horse (but see figure 79), mainly armed with a light lance, composite bow, sword or sabre and knife, though a mace or light axe might also be carried. This figure from the 'Képes Krónika' is actually a Wallachian, from the picture of an envoy — doubtless a boyar — delivering a message from Voivode Basarab to King Charles Robert prior to the Battle of Posada. His costume is in fact very similar indeed to that of 86, which is hardly surprising bearing in mind that Basarab himself was a Cuman (see figure 84). Here it comprises a light green tunic with light brown lining and dark green bands at waist, collar and cuffs, plus light brown stockings, black shoes (patterned in white), gold belt and brooch, and a green/brown cap with white vertical lines over the crown and a turned-up red peak at the front. His hair is again portrayed very long like that of figure 75.

78. ROUMANIAN CAVALRYMAN, 15th CENTURY

The shield held by this Wallachian is the native osier type, in this instance with an iron boss and fur-edged, but by the middle of the century others might substitute Hungarian 'wing' shields as described under 94. The costume portrayed is typical of that worn by the Wallachian upper-classes by this time, comprising a loose-sleeved striped tunic, a fur hat and a long woollen coat (replaced by a fur-lined skin one in winter) with short, wide sleeves and a wide collar which finished in a square flap at the back. Bright, rich colours were worn whenever possible. The hat was beehive-shaped, of lynx fur, and usually decorated with one or more feathers; 78a and b show alternative styles of felt or leather cap that might also be worn. Close-fitting trousers and boots completed the costume. Spurs were not worn by either Wallachians or Moldavians, their horses instead being controlled with the knees.

Moldavians would probably have still been indistinguishable, but is should be noted that many Moldavian boyars and viteji were actually Lithuanians, and probably resembled figures 140-143.

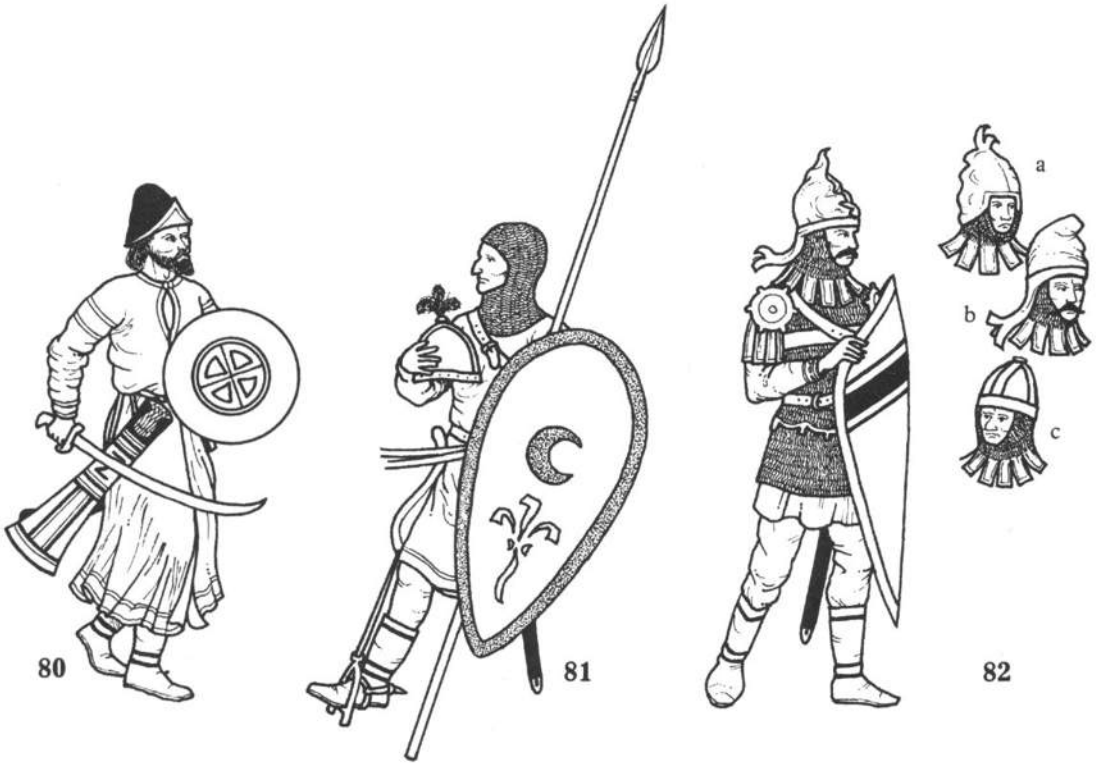
79. ROUMANIAN HEAVY CAVALRYMAN, 15th CENTURY

Despite the fact that armour is rarely mentioned in the sources it was, nevertheless, worn by many

Roumanian noblemen by the 15th century at the latest. This figure, based on a Moldavian reliquary of the second half of the century, is probably an accurate portrayal of such armour, here comprising a helmet and half-armour of Italian design, probably imported via Hungary. Transylvanian heavy cavalry, in fact, were even more heavily armoured in full Western panoply of plate, whereas the figure depicted here lacks gauntlets and wears only poleyns on his legs (since full leg-harness would undoubtedly have severely hampered his ability to control his horse). Others seemingly wore mail corselets or fabric armour instead, and most carried shields, the one depicted here being based on a surviving 15th century Wallachian example in Bucharest; it is blue, charged with a rampant white lion with gold tongue and claws.

80, 81 & 82. BULGARIAN CAVALRYMEN, MID-14th CENTURY

At the beginning of the 14th century the Second Bulgarian Empire was still a major power in the Balkans,



though its importance rapidly waned after the Serbian victory at Velbuzhd in 1330 until, fragmented among several princes following Tsar Ivan Alexander's death in 1371, it was unable to withstand the ensuing Ottoman attacks and was swiftly reduced to vassalage (1372). Finally, in 1393 Bulgaria lost the last vestiges of its independence and became an Ottoman *pashalik* or province, the last tsar, Ivan III, being executed in 1395. Only Vidin held out a little longer, as an Ottoman vassal under Ivan Stracimir, finally being occupied in 1396 after the defeat of the crusader armies at Nicopolis. For brief details of Bulgarian organisation see *Armies of Feudal Europe* (2nd Edition).

Of the figures depicted here, 80 and 81 are taken from a copy of the 'Chronicle of Manasses' made for Tsar Ivan Alexander in 1344-45. 80 portrays basic Bulgarian dress, which bears a close likeness to that worn by Cumans settled in Hungary (see figure 85). It comprises a tunic reaching to the knee or just below, under a long coat which could have extremely long sleeves, sometimes shown pulled down over the hands to hang down as far as the knees; possibly such sleeves were slit or had a vent for the arms to pass through, as with those of the Albanians and Turks. Close-fitting hose, short boots and a fur or felt cap completed the costume, the latter assuming a variety of forms including many similar to those depicted in 85a-c. That worn here is black with a brown upturned brim, while others are tall and pointed. Regarding clothing colours, this manuscript would seem to indicate that blue, red, brown and to a lesser extent green predominated, with duller or darker colours for hose and boots. Following Byzantine tradition, narrow bands generally appeared on the upper arm, and similar bands occur at cuffs, collar, hem, and sometimes the waist too; on this particular figure they are black, the coat being deep red. The quiver and shield are added from other figures.

81 portrays an armoured horseman. Most such figures in this ms. are coloured blue, doubtless indicating mail, but some wear green, brown or red tunics over their body-armour as here, where it is concealed beneath a long-sleeved, tan-coloured tunic so that only the mail coif is visible. Other figures have brown quilted leather coifs instead, or a combination of mail and quilt (see 82). Helmets depicted in the ms. are of two types, either the tall pointed *chichak* worn by figure 153, or the bascinet shown here, the latter frequently surmounted by a small red or blue plume. Others appear to be worn under a sort of Phrygian cap, as is confirmed by 14th century frescoes (see next figure), which also indicate that a few kettle-helmets were worn. His shield, suspended from a guige-strap, is painted blue-grey with a dark red rim and crescent and a light red flower (acanthus?). Frescoes contemporary with the ms. depict both bucklers and almond shields in use, with bucklers predominating; several bucklers held by a central hand-grip also appear in Manasses (e.g. that of 80, shown held by a tsar) and in the 'London Bible' of 1355-56. Some 13th-14th century frescoes also show Western European 'heater' shields, often coloured brown with iron rims, while others occasionally depict rectangular shields similar to the Serbian example shown in figure 73c. The frescoes would seem to

indicate that yellow was a popular Bulgarian shield colour, though the Manasses ms. most often depicts them white or blue-grey with dark red/brown or blue (presumably iron) rims.

82 is from a mural at Berende probably dating to c. 1325. The Byzantine-style armour it portrays, complete with breastband and pteruges, is characteristic of that found in all 14th century Bulgarian frescoes as well as in the Manasses ms., so can be assumed to be a reasonably faithful reproduction of contemporary equipment. The combined mail and quilt coif mentioned above can be seen clearly here, as can the characteristic shape of the cap worn over the helmet, with its several folds here at the front where other sources sometimes depict them at the back (as in 82a, from Manasses). 82b shows a variant of the cap, and 82c the type of helmet worn under it, all from the same fresco. The pattern on his shield is from the Manasses ms. and is red on a white background, with a blue (iron) rim.

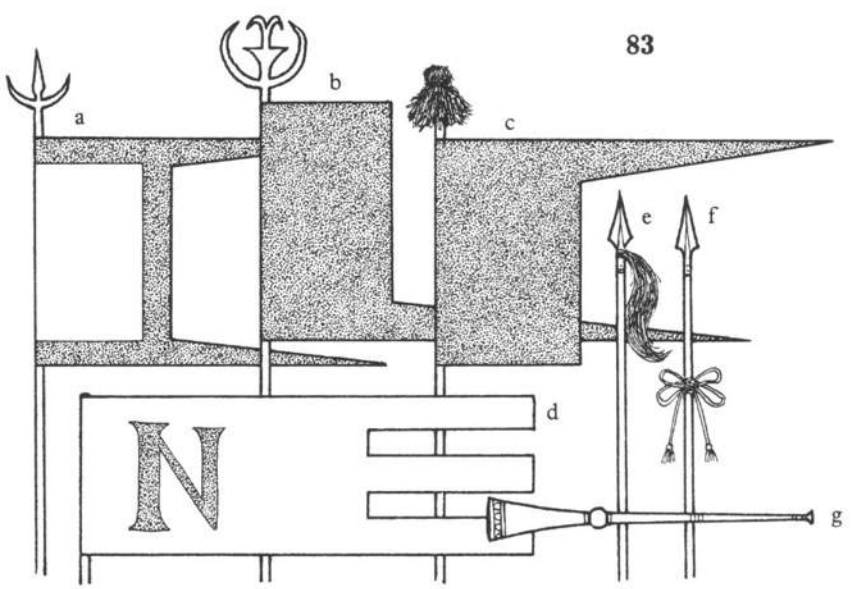
In both the Manasses ms. and the 'London Bible' such Bulgarian heavy cavalry are shown riding with long stirrups western-fashion, though it seems likely that light cavalry like figure 80 still rode with short stirrups; spurs are evident on many, but not all, figures in both these sources. Saddles are predominantly red or brown. The majority of figures in the Manasses ms. are armed with lances like 81, which they seem to have couched underarm, but occasionally such heavy cavalry are armed with a bow instead, when presumably a buckler was substituted for the large almond shield.

Where they appeared at all, infantry would have been archers and to a lesser extent spearmen, probably provided by Bulgar and Wallachian peasants and Greek town militiamen respectively, the latter of whom would probably have resembled figure 52. In one scene in the Manasses ms. an archer defending a castle wall is shown armed with a stirrup crossbow.

There is no known evidence for the use of artillery or handguns in Bulgaria during the 14th century, and significantly the modern Bulgarian words for cannon, gunpowder, bullet, etc., are all of Turkish origin. However, it is interesting to note that one of the earliest references to the alleged use of artillery by the Ottomans was during their campaign against the Karamanlis in 1387, on which occasion the greater part of the Ottoman army was comprised of Christian auxiliaries, including Serbs and Byzantines but predominantly made up of the troops of Bulgarian vassal princes (Bulgaria being obliged to provide the Ottomans with auxiliary troops after 1371/2).

83. BULGARIAN STANDARDS, MID-14th CENTURY

83a-c are from the Manasses ms., where considerable quantities of such flags are carried among each group of horsemen armed like 81 and 82. Many variants occur, all having tails of varying length at top and/or bottom, plus tufts of dyed horse-hair or ornate crescents and spikes such as those of 83a and c, which clearly betray the Bulgarians' Asiatic origins. Flags are invariably coloured red in the original, with the exception of a few such as 83a which are white or light grey with red borders and tails.



83d comes from a map of 1320 by the Genoese cartographer Pietro Vesconte, where it is shown flying over the port of Varna, denoting Bulgarian control of that part of the Black Sea coastline. It is white, with a red 'N' monogram that was presumably the device of the reigning tsar, Todor Svetoslav (1298-1322).

83e is from a fresco at Great Tarnovo and depicts the use of a horsetail as a lance pennon, while 83f, again from Manasses, is a red-painted lance that is shown being carried in battle by a tsar, with a red ribbon tied round it in the form of a bow.

In addition the Manasses pictures depict a number of mounted trumpeters, who are armoured as described under 81 and 82, with or without a shield, and carry trumpets like 83g. Identical trumpets are shown held by mounted Byzantine musicians in the 'Romance of Alexander the Great' ms. mentioned under figure 51, where the trumpeters are depicted both fully armoured and unarmoured except for a helmet and quilted hood.

84. CUMAN, 14th CENTURY

The Cumans were allied with the Bulgarians from the reign of tsars Peter and Assen (1185-96), and in the 13th century large numbers migrated from the steppes under Mongol pressure and settled along the banks of the Danube, thereafter providing a substantial part of both Bulgaria's and Hungary's armed forces as well as providing mercenaries to both the Poles (as at the Battle of Plowce against the Teutonic Knights in 1331) and the Serbians. The ruling Terter and Shishman dynasties of Bulgaria were themselves at least part-Cuman in origin, while it was a Cuman chieftain from Bessarabia in the north-east of the country who established the principality of Wallachia early in the 14th century.

This figure, from an Hungarian church fresco of c.1300, wears a short-sleeved yellow (leather?) topcoat pulled on over the head, and under it an off-white, three-quarter sleeved undercoat, a white shirt with embroidered cuffs, and brown leggings. On his head is a padded and quilted brown leather hood to which is attached a black cap with a white feather and a brown, upturned brim. Beneath the hood his hair is worn long, reaching to the shoulder-blades, which is also the way it is shown in the 'Képes Krónika' (for which see below). Indeed, 14th century sources invariably show Cumans with long hair, and though usually cleanshaven a full beard and moustache are sometimes depicted. Certainly in the late-13th century it had been customary for Cumans to shave off the beard.

Typical Cuman arms comprised composite bow, sabre, mace, and javelins. Lassoes may have also continued to be carried, but I have found no evidence of this. Shields where carried were always small and usually round, or occasionally almond-shaped.

The 'Képes Krónika' also includes Cumans (see below, figure 86), plus Bulgarians who are virtually identical to this figure. For earlier Cumans see *Armies of Feudal Europe.*

85, 86 & 87. HUNGARIAN LIGHT CAVALRYMEN, 14th CENTURY

These 3 figures and the next all come from the 'Chronica de Gestis Hungarorum' of Mark Kálti (these days more often referred to as the 'Képes Krónika', or 'Illustrated Chronicle'), a superbly illuminated ms. produced for King Louis I the Great of Hungary (1342-82), who in the course of his reign became in addition king of Poland (1370-82), Bosnia and parts of Serbia (1365-66) and Bulgaria (Vidin, 1365-70). It has been supposed for many years that the illustrations were executed in 1374-76, but more recent analysis favours the early 1360s, its author himself stating that he began writing it in 1358. The costumes worn here by 85 and 86, however, remained unchanged even in the first half of the 15th century.

Figure 85, from the picture of Louis and his court in the frontispiece of the ms., is fairly certainly a Jazyge or a Cuman or possibly a Szekler or a Ruthenian, or even a Tartar, all these ethnic minorities serving in Hungarian armies under their own chieftains throughout much of this period. He wears a long white kaftan with a blue pattern, blue lining, and gold and blue panels on the upper arm. The sleeves are quite long, and are occasionally shown even longer, hanging right over the hands as described under 80. In addition he wears red boots (the simple prick spurs are added from a 15th century source) and a light grey fur or sheepskin cap, such caps assuming a bewildering array of shapes in this ms., probably originally denoting differences between the individual ethnic groups and sub-groups. 85a-c show just a small selection of the many different types to be found in the original, most of which have wide brims, slit at the sides or front.

In the original he carries just a bow, the sabre and quiver shown here being added from other pictures. The

sabre (*sablya*) was popular but, by this late date, far from universal amongst the Asiatic elements of the army. Close proximity to the Ottomans, however, whose raids into Hungary began in 1389, brought about something of a revival in its use, and it was via Hungary that the weapon was introduced into Poland and Russia on a widespread basis.

Whatever the true identity of 85, there is absolutely no doubt that figure 86 is a Cuman, since he is based on a portrait of King Ladislas 'the Cuman' (1272-90) in the 'Képes Krónika' that shows him in characteristic Cuman costume, which this and other pictures in the ms. clearly portray as a long topcoat reaching to mid-calf (occasionally with a vent at each side), a knee-length shirt, and a tall, pointed cap with an upturned brim. In this particular case the coat is red with a white lining and darker red bands at collar and cuffs, plus gold embroidery at the top of the vent, and a gold brooch (also to be seen in figures 85b and c and most other such Asiatic figures in the ms.). The hat too is red, with a white upturned brim, while his stockings and shoes are blue-grey. The shield and sabre are added from another figure, some substituting a straight sword for the sabre. The shield is of interest in being a conventional Western European type rather than the small, circular buckler one might have expected; along with the sword it can doubtless be taken as evidence of the gradual westernisation of such troops. Nevertheless, on horseback such figures are invariably shown armed with composite bow and sabre, the shield presumably being slung at the back or hung from the saddle when the bow was in use. Circular shields were also still used.

Figure 87 is the odd man out in the 'Képes Krónika', being the only light cavalryman dressed in ordinary mid-14th century Western European fashion, which undoubtedly makes him a native Hungarian horse-archer rather than an Asiatic auxiliary. He is therefore fairly certainly one of the mounted archers that the 14th century banderia are known to have included and that in the 15th century became one of the standard troop-types called for by the *militia portalis*. He wears a pink tunic and white hood and rides with an Asiatic-style saddle, more suited to horse-archers than the high-pommelled Western European saddle. It was probably such bow-armed cavalry that Froissart intended by his reference to the Hungarians including 'many crossbowmen on horseback' during the Nicopolis campaign.

88. HUNGARIAN MAN-AT-ARMS, 14th CENTURY

Again based principally on the 'Képes Krónika' frontispiece, this figure demonstrates that Hungarian men-at-arms of this period were basically indistinguishable from those of Germany; Otto of Freising wrote as early as the mid-12th century that Hungarian knights were beginning to adopt the arms and tactics of the crown's German mercenaries, and this trend had obviously continued. He wears a red brocade jupon over a mail haubergeon and a coat-of-plates, guard-chains attached to the latter being almost invariably left hanging free in this ms. rather than being attached to the sword and dagger as one would have expected. Other pictures show men-at-arms wearing just mail armour, comprised of haubergeon, chausses and aventail, plus plate gauntlets. The leg-harness depicted here includes studded leather cuisses plus latten poleyns. Arm-harness, however, is totally absent from this particular ms., though it occurs in most other contemporary Hungarian

sources, from one of which that depicted here is taken. Instead most have three-quarter length mail sleeves, some in addition wearing leather pteruges at the shoulder.

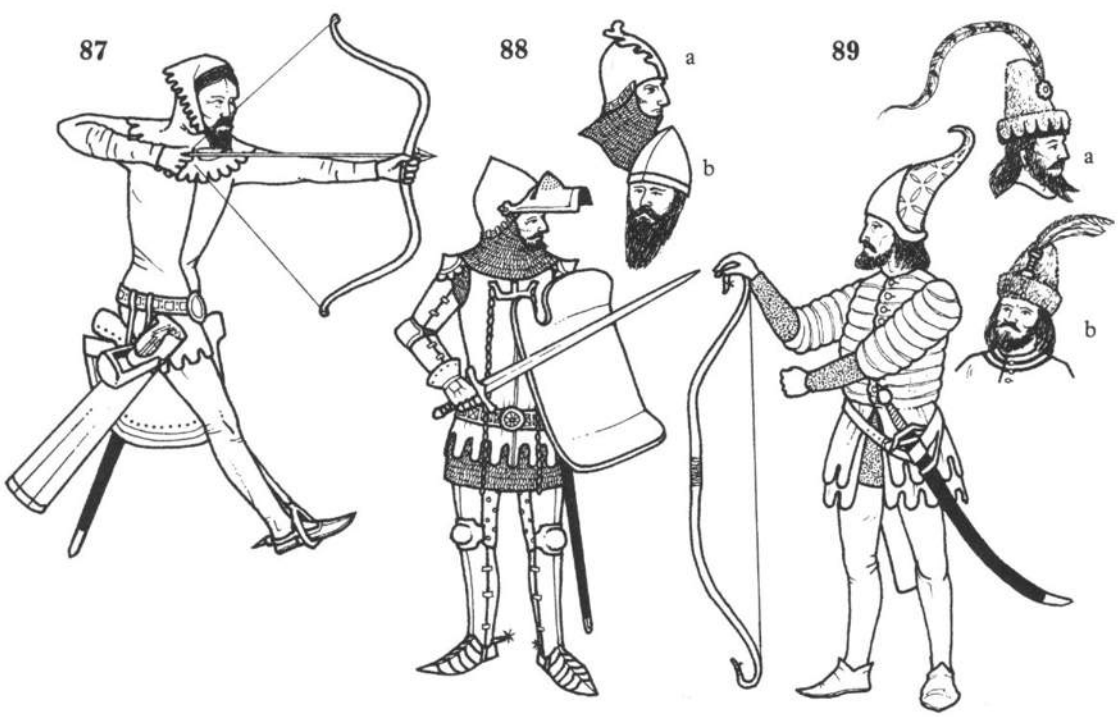
This ms. and many other sources indicate that most Hungarian men-at-arms wore bascinets, more often than not without a visor; the visor shown here is therefore added from another source (a fresco of c. 1350). 88a depicts an alternative kind of bascinet, with an ornate strengthener over the forehead and crown, which occurs several times in the ms. and perhaps evolved from helmet-covers such as are described under figure 82. 88b is another detail from the same source, showing the kind of long beard to be seen worn by many Hungarian men-at-arms in 14th century pictures.

Hungarian men-at-arms are usually portrayed in the sources as being armed with lance and sword, but it is clear that the sabre was also popular, as were the war-hammer and the mace. In addition, it is apparent that 'according to traditional custom' noblemen were expected to bring even a bow and arrows with them to musters, even though there seems to be no evidence of bow-armed men-at-arms in contemporary sources. Probably the bow was used by a retainer, mounted or otherwise.

His bouched shield is one of 2 or 3 variants to be found in the sources, with the bottom edge square as here or rounded like that of 85, and with or without the *bouché*.

89. HUNGARIAN FOOT-SOLDIER c. 1350

From the mid-14th century onwards many figures of this general appearance, both cavalry and infantry, are to be found in Italian pictures, since it was from that time (1348) that Hungarian armies and individual Hungarian mercenaries began to appear in large numbers in Italy. This particular figure, based on several different frescoes, is fairly certainly a Szekler since we know that of the 3 levels of military service owed by the Szekler community the lowest called for the service of light-armed infantry. Alternatively he may be a *jobbágy*, i.e. the holder of a 'serf-lot', many of whom were so impoverished by the late-14th/early-15th century that they performed their requisite military service on foot. He wears a cap virtually identical to that of 86, plus quilted body-armour that tallies closely with a description given by Villani of Hungarian troops campaigning in North Italy in 1356, where he says their armour generally comprised *farsetti* (short, padded leather corselets) which they seemingly wore 2 or 3 at a time; certainly the figure depicted here wears 2. 89a and b show 2 versions of a variant type of Hungarian cap that frequently appears in Italian pictures of the 1350s-1360s.



His arms comprise a sabre and a large composite bow, the characteristic weapons of a jobbágy. Bertrandon de la Brocquière reported that Hungarians, Austrians and Bohemians all used bows 'like those of the Turks, but not so good nor so strong; and they do not use them so well as they [the Turks] do. The Hungarians pull the string with 3 fingers, and the Turks with the thumb and ring.'

90. HUNGARIAN FOOT-SOLDIER c. 1380

Remarks such as Oman's that 'the Hungarians had no native foot-soldiery of their own' probably derive from the fact that cavalry predominated on the battlefield so dramatically that infantry rarely got a look-in when the chroniclers compiled their versions of events, and it is undeniable that before the large-scale employment of mercenary armies began in Hungary towards the middle of the 15th century infantry played a very secondary role in Hungarian warfare. Nevertheless, even Oman acknowledges that Schiltberger records infantry amongst the Hungarian garrison put into Vidin by Sigismund en route to Nicopolis, and even though Froissart refers to the army containing 'but few afoot' in one place and being 'all on horseback' in another, it is significant that another chronicler, the Religieux de Saint-Denis, mentions '40,000' infantry as being present at the latter battle.

The figure portrayed here, from a church fresco, is undeniably an infantryman, and his armour marks him out as one of the wealthier jobbágy, who seem to have been armed with sword, shield and spear rather than bow and arrows. Armour was not a specific requirement of those performing militia service until the latter part of the 15th century, but doubtless those that could afford it wore it. This particular figure has a mail corselet and hood, plate armour for the fronts of his legs and feet, and a yellow pavise decorated with a non-heraldic dragon device.

In the 15th century Hungarian infantry were predominantly provided either by mercenaries (chiefly Bohemians, but also Germans, Italians and, after 1482, some Swiss), or else by Transylvanians, Wallachians and Moldavians. Many of the mercenaries were handgunners, as too were a sizeable proportion of the Transylvanians — 2,000 of them in 1475/9 — the handgun having apparently come into common use in the Balkans in the 1420s, probably being introduced into Hungary in the hands of Italian mercenaries. By the time of the second battle of Kossovo in 1448 they were relatively widespread amongst Hunyadi's Transylvanian, German and Bohemian forces, one source referring to them having small, medium and large 'bombards which they call *sciopietae*'. The smallest weighed about 15 lbs, but the largest, called *puschoni*, could weigh up to 90 lbs or even 135 lbs. In 1480 King Matthias himself could write of Hungarian armies that 'we make it a rule that one-fifth of the infantry are arquebusiers', the other four-fifths being light and heavy infantry and pavise-bearers.

91. EASTERN EUROPEAN PEASANT INFANTRYMAN

One further type of foot-soldier to appear in 15th centuy Hungarian — or more specifically Transylvanian — armies under Janos Hunyadi was the peasant volunteer or crusader, repeatedly mentioned in particular in many contemporary chronicles of the 1440s and 1450s. The 'Historia Boemica' says that only a third of these were or became competent at handling arms, the remainder fighting instead with typical peasant weapons of sling and scythe. Giovanni di Tagliacozzo also wrote that those present at Belgrade in 1456 were armed with swords, stakes, slings, clubs, stone-throwers (stone-bows?), bows, and iron hooks to unhorse the Ottoman cavalry, but mentions that some (presumably amongst those trained up by Hunyadi) had handguns firing lead bullets. In Hungary itself serfs armed with scythes and other agricultural implements performed sterling service against Bohemian invaders and routed Ottomans alike in 1465 and 1479.

92. HUNGARIAN MAN-AT-ARMS c. 1445

Because of its geographic location Hungary was subjected to both Italian and German influences in armour design, and although the latter generally predominated the former seems to have remained popular well into the 15th century. The figure depicted here is actually from an Italian fresco of 1445-50 depicting the Florentine condottiere Filippo Scolari (nicknamed Pippo Spano by his contemporaries), who went to Hungary at the age of 13. He fought at Nicopolis in 1396, by 1407 was *ispan* or count of Temes, and commanded Hungarian armies for King (later Emperor) Sigismund in Italy 1411-12, in South Hungary and Serbia, in Bosnia 1416, against the Hussites 1420-22, and in Wallachia 1423-27. He wears characteristic Italian armour of the period, described under figures 77 and 122 in volume 1, with a pale blue silk surcoat over it that has hanging sleeves as described under figure 109 below. The sleeves and fringe to the skirt of his surcoat are gold with red decoration; in addition his stockings and tunic sleeves (visible on the insides of his thighs and elbows) are also red, as is the waist-belt.

His helmet and shield are added from other sources. The shield evolved from the type described under figure 73. Adopted under Serbian influence, it seems to have appeared in Hungary during the first half of the 15th century (Laking includes a picture of one which is claimed to date from the 'early' 15th century*), that illustrated here belonging to the second half of the century. From Hungary or Serbia, this so-called wing-shield was adopted in turn by the Ottoman Turks, and it is the predominant type of Turkish shield depicted in 16th century illustrations. In fact the Ottomans had actually begun to adopt it before the end of the period under review, the earliest Ottoman picture of such a shield that I have seen dating to c. 1500; this is shown in 92a, and is red with a gilt rim and decoration.

93. HUNGARIAN MAN-AT-ARMS 1487

This figure, from the tomb effigy of Imricha Zapolyai, a member of one of the country's leading noble families, shows a Gothic armour being worn that nevertheless betrays some Italian influence in the tassets and breastplate. This type of armour remained in use in Hungary for the rest of this period and into the early-16th century. Note the single feather on his sallet, a simple type of helmet-crest that is to be seen in a considerable number of Hungarian sources throughout this era; it seems to have been used to denote men of rank.

94 & 95. HUNGARIAN OR SERBIAN HUSSARS, LATE-15th CENTURY

Despite the fact that Serbian light cavalry were apparently being referred to as *gusars* or *usars* by the 14th century, the establishment of hussars as a recognised troop-type only first took place in Hungary under King Matthias Corvinus (1458-90), after the fall of Serbia. The exact origin of their name is unknown, but it has been suggested (a) that it evolved from 'Khazar', via Byzantine *Chosarios*; (b) that it comes from Hungarian *huszar*, meaning each twentieth man; or (c), and most probable considering their Serbian origin, that it derives from the Serbian *gusar* or *husar*, meaning a robber or plunderer — a likely enough description of a mediaeval light cavalryman. The Poles and Lithuanians, who also employed hussars by the very end of this era (as, to a limited extent, did the Austrians and some other Germans), called them simply *Raci* or *Racowie* ('Serbians')†. In Hungarian service they were organised in units of 25 men called *turbae*.

Figure 94 is taken from an engraved sabre-scabbard chape of 1500, the earliest known representation of a hussar, with a few details added from a contemporary Polish painting of the Battle of Orsha (1514); there is no reason to suppose that hussars of the mid-15th century were any different. He wears an 'Hungarian cap' and a topcoat called a *mente*, probably with either embroidered frogging or proper frogging across the

A Record of European Armour and Arms Through 7 Centuries, 1920-22.

†The term *Raci* derives from Rascia or Rassia, a name coined for Serbia in the 12th century, derived ultimately from the name of the original centre of the Serbian state, the fortress of Ras.

chest like that of 95, in silver, white and gold. His arms comprise a lance 10-12 feet in length and a sabre, the scabbard for which was usually black and heavily ornamented — or sometimes completely covered — in decorated metal and gilt plaques, like that from which this figure is taken.

Figure 95, of early-16th century date, wears a long-sleeved quilted tunic (*joupane*), and over it a topcoat with hanging Albanian-style sleeves that were tucked through the belt or sash at the back when in action. His headgear is again an 'Hungarian cap', often worn adorned with one or two eagle feathers stuck through the brim at the front, or occasionally with ostrich feathers in a plume-tube like that of 94. His mace is of a type usually described specifically as Hungarian, even though it was also in widespread use in Serbia.

96. HUNGARIAN FLAGS

96a, described as an Apostolic cross on a triad of hills, was originally granted to Stephen (997-1038), first king of Hungary, by Pope Silvester II. It is red, with the cross in silver and the hills in green. The 'Képes Krónika', from which this and the next 3 flags are taken, invariably shows it carried alongside the red-and-white striped royal flag depicted in 96b.

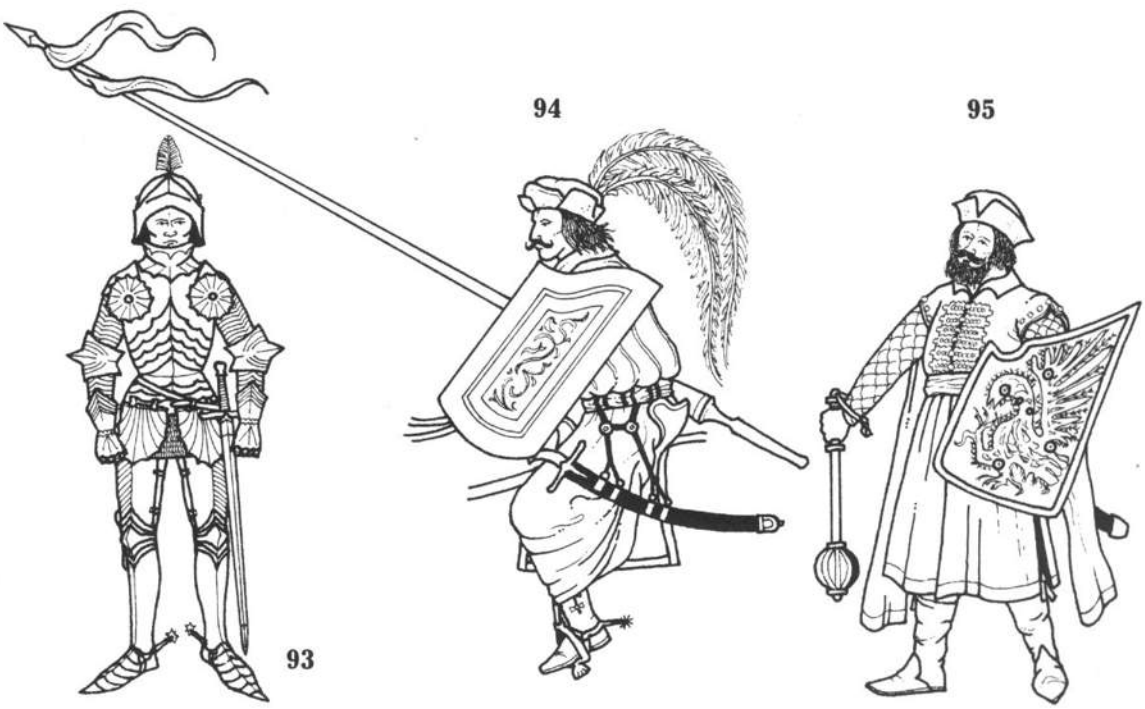
96c is a variant of the last, having the Angevin arms (azure, semé-de-lis or) impaled with those of Hungary. This is taken from a picture of the Battle of Rozhanovce in 1312, where it is carried by King Charles Robert's army.

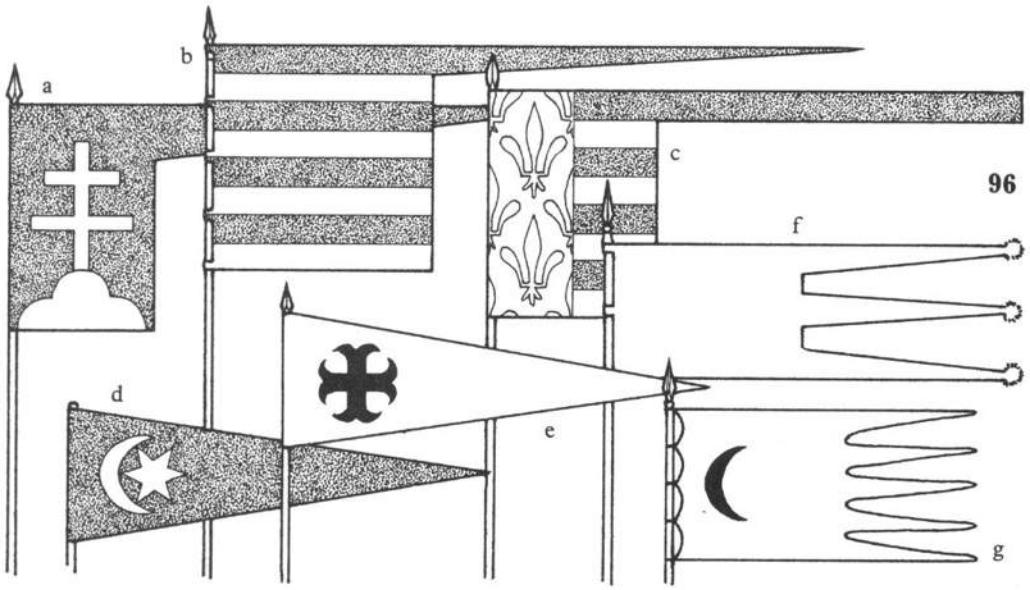
As elsewhere in Europe, Hungarian knights carried their own arms on their lance pennons, of which 96d and e show two 14th century examples. 96d displays the gold on red arms of the Hont-Pázmány family, while 96e is from Froissart's description of the pennon carried at Nicopolis in 1396 by Henry of Esteulemchale, Marshal of Hungary, whose arms he gives as argent, a cross moline sable.

96f and g are two examples of Serbian flags, from 13th-14th century murals. 3-tailed lance pennons also frequently occur. Note the appearance of a crescent on 96d and g, for further information on which see page 190.

97. TEUTONIC KNIGHT IN HABIT, 14th CENTURY

This is the Hochmeister Dietrich von Altenburg (1335-41), taken from a miniature on the official investiture





document of 1337 showing Emperor Ludwig IV authorising the Order to conquer Lithuania. He wears the Order's white habit and mantle with a black cross on the left breast, plus the obligatory beard that all brethren had to wear. His hair is long (all Germans wore their hair long, often to the shoulder-blades, from about this date through to the end of the era), but is still tonsured.

98. TEUTONIC KNIGHT c. 1400

Throughout this period Teutonic Knights would have been armed like their lay contemporaries elsewhere in Germany (though admittedly the 1348 seal of the Livonian Landmeister still depicts a brother knight apparently equipped exactly as shown in *Armies of Feudal Europe*). The principal difference, of course, was that brethren of the Order wore a white jupon marked with a black cross, apparently with silver piping, as depicted here (but only in the case of knights; serving brethren wore instead a grey surcoat with a black *tau* cross, i.e. a cross with no upper arm, looking like a capital 'T'). Except for his *Hundsgugel* ('hound's hood') helmet, this particular figure is from the brass of Kuno von Liebensteyn, *Komtur* of Strassburg 1389-91, and portrays typical late-14th/early-15th century armour of the type that most of the Order's knights doubtless wore at Tannenberg in 1410; the cloak is unlikely to have often been worn in battle, though at Tannenberg the Hochmeister, Ulrich von Jungingen, appears to have worn his over his gilt armour (perhaps to conceal it and thus make himself somewhat less conspicuous). Fra Kuno's shield is white with a black cross like his jupon, and is of a type with a prominent raised central rib that originated in Lithuania (see figure 142). It seems to have been the principal type of shield used by the Order by the late-14th century, also being depicted held by St Maurice on one side of the Livonian banner, shown in 103x, captured in 1431. 98a depicts an earlier 14th century shield of characteristic Prussian shape, belonging to Hochmeister Karl Beffart von Trier (1310-19).

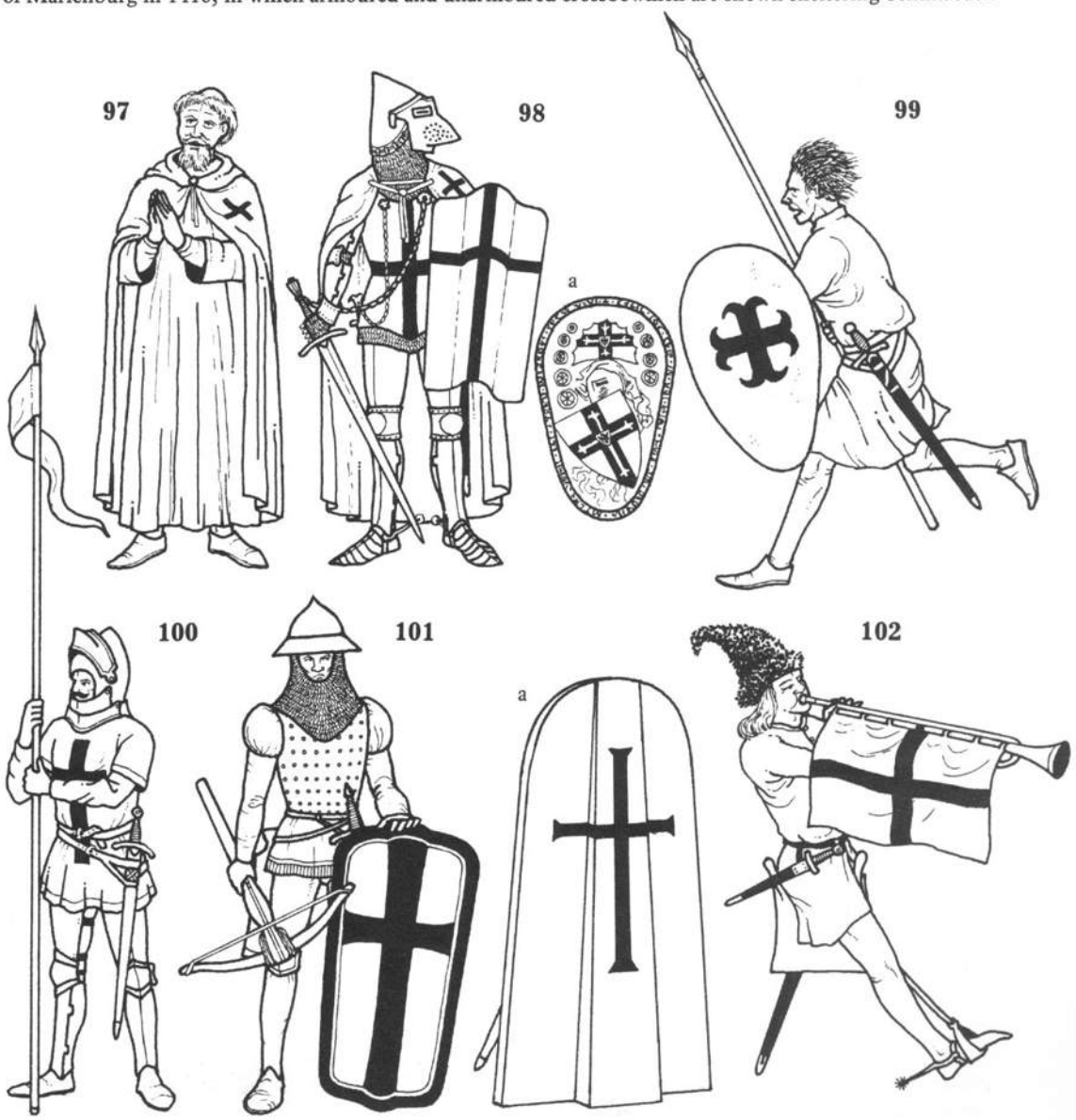
99. FOOT-SOLDIER OF THE ORDENSSTAAT, 14th CENTURY

This figure from a scene in the Polish 'Legend of St Jadwiga' ms. of c. 1353, depicting the Battle of Leignitz in 1241, is undoubtedly intended to represent one of the converted natives on whom the Order relied heavily for its infantry and auxiliary cavalry on the Livonian frontier. Kurs, Livs and Letts in particular could be found fighting for the Order in large numbers, though the 'Livonian Rhymed Chronicle' at least indicates that the majority of them were somewhat timid and far from consistently reliable, except in the regularity with which they turned in flight at the first sight of a Lithuanian war-band, invariably leaving their outnumbered Teutonic overlords decisively in the lurch. It should be emphasised, however, that the same chronicle makes a point of praising those who *did* loyally stand and fight, so clearly not all were of the same craven disposition. This figure wears a bleached linen tunic and trousers and carries a white, characteristic almond-shaped shield with a black cross. Most were armed with sword, spear and shield. Some had bows, but the Order relied almost exclusively on its own much-feared crossbowmen for covering fire in sieges and on the battlefield.

100 & 101. FOOT-SOLDIERS OF THE ORDENSSTAAT, 15th CENTURY

These two figures, representing sergeants or mercenaries of the Order, come from a woodcut illustration in a 16th century Polish chronicle depicting the Battle of Tannenberg that is clearly based on an earlier original. The spearman wears a jupon, similar to that of 98, which may conceal some sort of body-armour, but other than the helmet the only armour clearly in evidence is his leg-harness which, as is usual for a foot-soldier, leaves his feet unarmoured. He is armed with a spear some 10 feet in length and a sword, but carries no shield. Unlike those of brethren, the cross on his jupon would not have had silver piping.

His companion, undoubtedly one of the Order's bow and crossbow-armed mercenaries (he is shown in the original with a bow, but the crossbow was far more common), is of distinctly mid to late-15th century appearance. He wears a brigandine, poleyns, mail hood and kettle-helmet. His pavise is based on a surviving example once in Marienburg Castle and is constructed of wood covered in leather, white-washed and painted with a large black cross. It is 41¼ inches tall, 18¼ inches wide at the bottom and 22 inches at the top. 101a, a pavise of the larger type often called a mantlet, comes from a 15th century Polish painting of the siege of Marienburg in 1410, in which armoured and unarmoured crossbowmen are shown sheltering behind such



shields. The Order apparently began to re-equip its crossbowmen with handguns during the first half of the 15th century and certainly had some at Tannenberg. A troop of 60 men raised by the Order in Prussia in 1449 included as many as 8 handguns, as well as 2 light cannon, amongst its equipment.

These same 2 figures appear, inaccurately rendered and in fictional colour schemes, in Saxtorph's *Warriors and Weapons of Early Times* (figures 268 and 271), where they are rather inexplicably described as a French archer and an English standard-bearer!

102. MUSICIAN OF THE ORDENSSTAAT

The Teutonic Knights, like most of their contemporaries, used flags and trumpets to transmit orders on the battlefield. The 'Livonian Rhymed Chronicle' of c.1290 mentions trumpets ('horns') several times in this context, in one instance recording the Livonian Landmeister saying to a brother knight: 'If the Semgallian army attacks you, set up a defence and blow my horn. That shall be the signal for me to come with my band.' In a longer passage we are told how 'when the morning light appeared, the Master ordered the war-horn blown as a signal. The noise was grand and mighty, and the army quickly gathered itself together and made ready. Once again the horn sounded clearly, at which the army broke camp. When the third blast was blown, good Master Andreas von Stierland (1248-53), like a bold hero, began the march with his entire army.' (Compare this description to those in volume 1, notes to figures 60 and 130.)

Some musicians were provided by the Order's vassals — the city of Reval, for instance, sent a mounted, uniformed band of 7 trumpeters and pipers to join Livonian armies in 1433 and 1435 — while others belonged to the Order. The trumpet and Lithuanian-style fur cap of the figure depicted here come from a picture of c.1485.

103. FLAGS OF THE TEUTONIC KNIGHTS

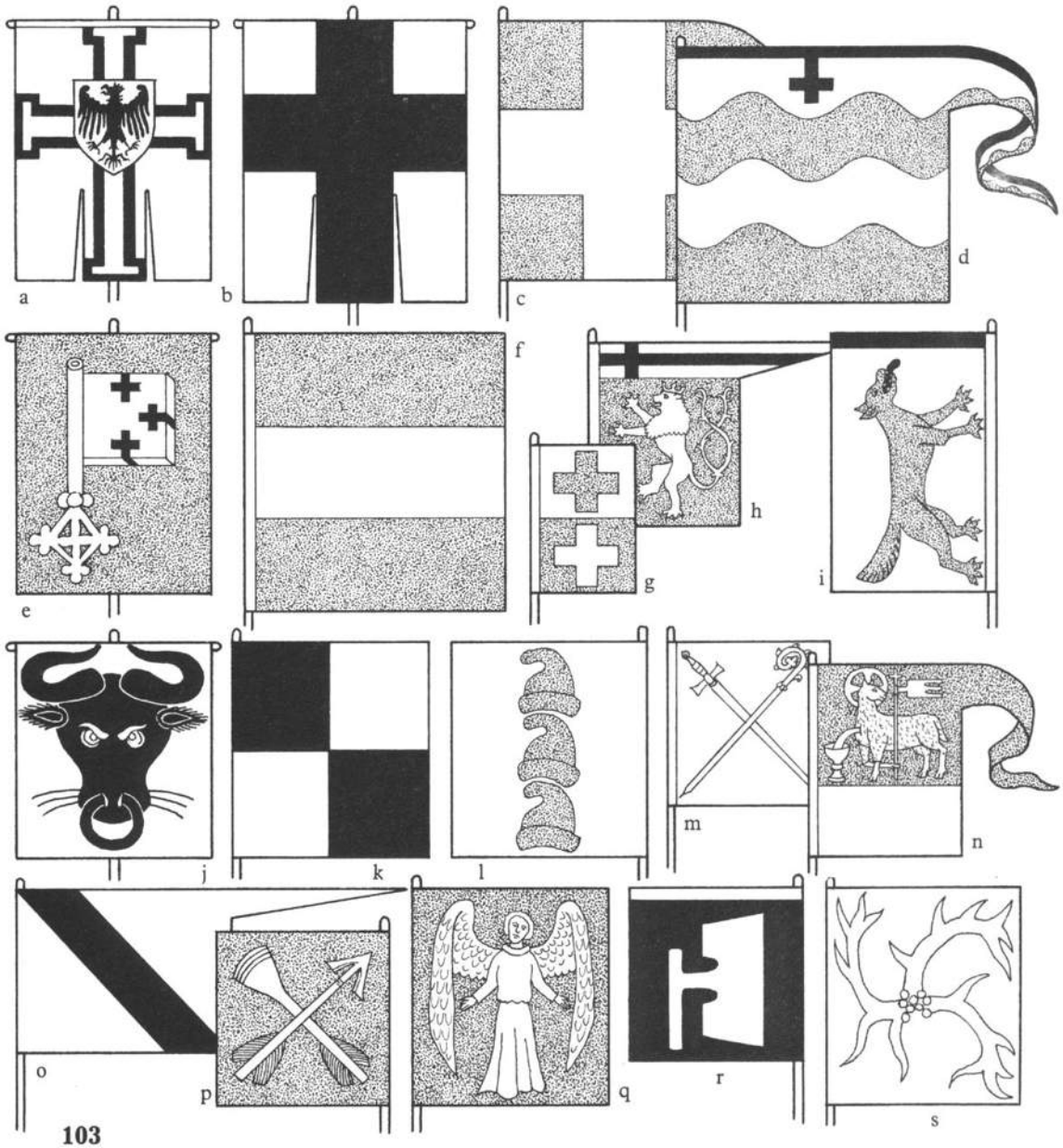
It is clear from the sources that, regardless of their composition, Teutonic Knight armies were invariably organised under individual banners on the battlefield. To quote another passage from the 'Livonian Rhymed Chronicle': 'After the native troops of Kurland and Semgallia had joined them, the Master and his advocates and the crusaders deemed it time to group the people under various banners, as is the custom in war. When they arrived at the frontier, the advocates regrouped their forces and drew them up for combat. The banners were entrusted to those who were eager for battle and who knew how to conduct themselves in such matters . . . Although there were many banners, the natives were so well-trained that they would not stray from their own.'

52 banners of the Order were captured at Tannenberg and hung in Krakow Cathedral, where they remained until 1940, when the Germans removed them to Marienburg after their occupation of Poland. As early as 1448 they were recorded by Jan Dlugosz, and drawn by Stanislaw Durink of Krakow, in a book entitled 'Banderia Prutenorum' (*Banners of Prussia*), from which this selection is taken.

103a is the 'greater banner' of the Order's Hochmeister, who at the time of the battle was Fra Ulrich von Jungingen. It is white, with a gold cross outlined in black, and in the centre a gold shield charged with an eagle displayed sable. The hoist is blue, as are those of many of the flags depicted in Dlugosz's book. In addition the Hochmeister also had a 'lesser banner', basically a smaller version of the flag depicted except that the hoist was white, the lower edge was not split into 3 tails, and there was no black bar across the ends of the cross arms, the gold inner cross instead reaching right to the edges of the flag. The 'greater banner' measured 70¼ inches x 52¾ inches, and the 'lesser banner' 29¼ inches x 23½ inches. Probably they were both carried in the same division, Dlugosz's reference to the Hochmeister leading under the 'greater banner' picked men from his council, plus brother knights, probably being an allusion to his bodyguard. Both flags seem to have actually been vexilla, suspended from a crossbar, as too were 103b, e and j.

103b is the banner of the Order, a simple black cross on white. This flag measured 76¼ inches x 64½ inches. At Tannenberg it was carried in the division commanded by Friedrich Wallenrod, Grand Marshal of Prussia and commander of the left wing.

103c is the flag of the Order's 'Company of St George', under which German mercenaries in the employ of the Teutonic Knights were normally mustered, as they were at Tannenberg. Durink depicted this flag as a white cross on a red field with a short red tail, which was fairly certainly a mistake since Dlugosz elsewhere more plausibly describes the banner of St George as a red cross on white (see also 139c). The Teutonic Knights regarded St George as their patron saint, insisting that in their own land or service they



103

alone had the right to bear his flag. This resulted in English crusading contingents being forbidden from unfurling their own flags of St George, as is recorded in 1364 and 1392.

103d is one of two banners of Kulm captured at the battle. Measuring 70¼ inches x 74 inches (plus a tail 76¼ inches long), it is divided into wavy white and red bands, with a black border and cross at the top edge. The Swabian knight who carried this flag (Mikolaj or Nikolaus of Renys) was executed by Jungingen's successor for — in Alan Nickel's words — 'displaying insufficient zeal in the battle' (in fact he deserted). The second banner differed principally in having a white hoist, and its tail divided vertically into broad red and white stripes; in addition it was smaller, only about 49¾ inches long with a tail of 47 inches.

103e is the banner of the Order's Grand Treasurer, who at the time of Tannenberg was Thomas Marcheim. Appropriately enough, his division included many mercenaries. The flag is red, with the key in white.

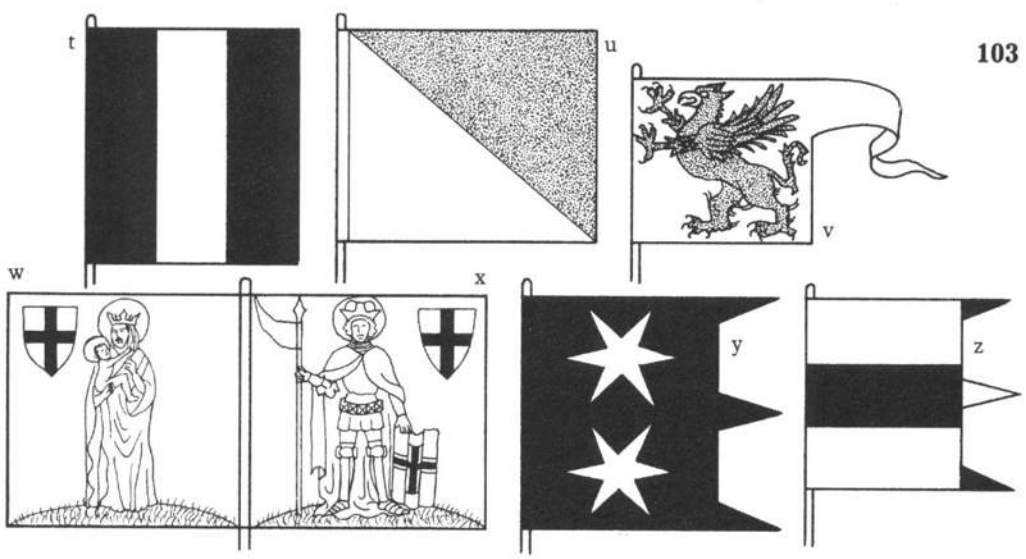
103f is the banner of the *komturei* of Stühm, under which the Grand Commander, Kuno von Lichtenstein, fought with some brethren and many Austrian mercenaries — hence the flag, in Austria's red-white-red colours, with a white hoist. A large flag, it measured 76¼ inches x 70¼ inches. A similar flag, of slightly narrower proportions (64½ inches x 49¾ inches) and with the stripes from top to bottom in red, white and black, with a blue hoist, was carried in the division of the advocate of Laski, the advocate of Hohenstein's division having a very similar (but square) flag with the colours inverted. Yet another similar flag, this time measuring 64½ inches x 58 inches and coloured green/white/red, with the white central band slightly wider than the others, plus a white hoist, was carried by a unit of German crusaders.

103g is the red and white banner, with a blue hoist, of the komturei of Elbing. This was the commandery of Werner von Thetingen, or Tetlingen, the Grand Hospitaller, who was the only one of the Order's great officers to escape alive from the battle (being consequently disgraced for having fled the field). Dimensions were 41 inches x 26½ inches. A second flag, under which Elbing's *vicekomtur* fought, differed only in the crosses being formée rather than plain, while a third (the banner of the town of Elbing itself, under which the burgomeister led citizens and mercenaries) was identical to that depicted except in having the colours reversed, retaining the blue hoist. Curiously the 'Banderia Prutenorum' makes the flag of the vicekomtur's division larger than that of von Thetingen's — slightly more than half as big again — which means, presumably, that this was the komturei's main flag (which implies that Dlugosz got them the wrong way round). That of the town was bigger again, measuring 70¼ inches x 35 inches. Another similar flag captured in the battle was that of the town of Braunsberg, in which the crosses were again formée, black on white in the top half and white on black in the bottom half, with a grey hoist and measuring 41 inches x 29¼ inches.

103h is the banner of the komturei of Königsberg, the commandery of the Grand Marshal. At Tannenberg this division was led by the vice-marshal. The flag carries the royal arms of Bohemia (gules, a lion rampant queué fourchée and passed in saltire argent, armed and crowned or), conferred on the commandery by Jean de Luxembourg, king of Bohemia, whilst crusading in Prussia with the Order in 1329. The arms of the Order are displayed in chief, and the hoist is red. This flag measured about 49¾ inches x 70¼ inches (inclusive of schwenkel).

103i is the banner of the komturei of Balga, being white with a red wolf (with a black tongue) and a black top edge, which in fact may actually be the hoist (the flag possibly having been hung wrongly by its Polish captors). This measured 70¼ inches x 44 inches. A similar but smaller banner (only a little over half the size of that depicted here) differed in its reversal of white and red, in addition to which the wolf's tail was shown down and the hoist was coloured blue; it was carried by a body of crusading Swiss knights, and it seems likely that they were attached to this commandery.

103j is the banner of the komturei of Graudenz, comprising a black bison's or bull's head on white, with yellow nostrils and eyebrows, and white eyes with red 'bags' under them. The nose-ring, horns and edges of the ears were mid-grey rather than black. This division was commanded by Wilhelm von Helfenstein.



103k is the black and white banner of the komturei of Althausen Höhe, this division being comprised at Tannenberg almost entirely of mercenaries. The banner of the komturei of Osterode differed only in the substitution of red for black and the addition of a white hoist. These two divisions were commanded by Wilhelm von Ippinburg and Konrad von Pinzenau respectively. Another flag, that of a unit of Misnian knights, had the quarters instead in red and blue, again with a white hoist, and measured 58 inches x 52¾ inches.

1031 is the banner of the komturei of Ragnit. It is white, with the 3 hats (blazoned by Dlugosz as *pilei*) in red. A second identical banner is attributed to the bishop of Sambia (Samland), men-at-arms and mercenaries of the bishopric fighting under it — but see next note. It seems likely that the pilei carried on both flags (also described as 'mitres' and 'helmets') were probably representations of Samogitian fur caps. Both flags measured 58 inches x 52¾ inches.

103m is attributed to the bishop of Kulmland, but is more likely to belong to the bishop of Sambia. It is white with a blue hoist and the sword and crook in red. It measured 44 inches x 52¾ inches.

103n is the banner attributed — probably wrongly — to the komturei of Schlochau. The lower portion is white, as is the hoist, with the *agnus dei*, goblet, halo and standard in white on a red background. It measured 52¾ inches x 41 inches, with a schwenkel of 47 inches. A very similar flag is more credibly recorded being carried at the head of a contingent provided by the bishop of Warmia (Ermland), though it differs in such subtle details as having a red hoist, a solid halo behind the lamb's head, a flag which is wholly attached to the staff and bears a cross, a deeper white band, and a shorter schwenkel (35¼ inches).

103o is one of two identical banners under which the men of the komturei of Danzig fought, one division being under the komtur, Johann von Schonfeld, the other being under the vicekomtur. It is white with a black diagonal band. They seem to have both measured 44 inches x 58 inches, with tails 47 inches long. The men sent by the town of Danzig, including a large number of hardbitten seamen, fought under a flag like that of the vicekomtur of Elbing described under 103g, differing only in both the crosses being white on an undivided red field.

103p is the banner of the komturei of Mewe, under which many German mercenaries fought under its commander, Johann, Gräf von Wende. The arrows, one of them a bird-bolt, are in white on a red field. Virtually the same design, with the colours reversed, also appears on the flag of a unit of German crusaders, who were therefore probably attached to Mewe. The latter flag measured 47 inches square, 103p being slightly deeper and narrower.

103q is the banner of the komturei of Engelsburg, comprising a white angel, with brown hair, and face and hands proper, on a red field. Commander of this division was Burkhard Wobek, the Order's Grand Drapier.

103r is the banner of the town and advocate of Heiligenbeil. It is black with a white axe and a white band at the top edge which, in another flag (that of the advocate of Bartenstein), extends into a schwenkel. The latter flag also differs in having no shaft above the socket of the axe, plus a blue hoist, and is also a few inches bigger than 103r, which was 47 inches square.

103s is the banner of the advocate of Brathian and Neumarkt, who was Johann von Redern. White with conjoined antlers in brown.

103t is the banner of the komturei of Nieszawa. The stripes are black/white/black. A similar flag, that of the advocate and town of Dirschau, had 4 stripes instead (black/white/black/white), plus a grey hoist, and measured 58 inches x 50 inches. Commanders of these two divisions were Gottfried von Hatzfeld and Matthias von Bebern.

103u is the banner of the komturei of Ortelsburg, led at the battle by its commander Albert von Eczbor. It is red over white, with a blue hoist, and measured 52¾ inches x 64½ inches. A second, identical banner, differing only in having a white hoist and being 3 inches shorter is also depicted in Dlugosz's book, having been captured at the Battle of Koronowo on 10 October 1410, where the new Hochmeister, Henry von Plauen, was defeated by a Polish army allegedly only half the size of his own.

103v is the banner of one of the Order's Polish allies at Tannenberg, belonging to Casimir V, duke of Stettin in Pomerania, who led 600 men-at-arms and was taken prisoner. It is white, with a blue hoist and a red griffin with yellow talons and beak, and measured 41 inches x 44 inches. See also 139n and p.

The last 3 flags are all Livonian banners captured at the Battle of Nakel in 1431. 103w and x depict both sides of the Landmeister of Livonia's flag, comprising on the one side a negro St Maurice in blued steel armour, and white cloak and surcoat on a white background, with his halo, crown, belt, lance, poleyns and couters all in gold, and on the other side the Livonian Mother of God device, with Mary in a blue gown over a white shift, the haloes and crown in gold, the flesh and hair proper, all on a white background. The escutcheons and St Maurice's shield bear the arms of the Order, and both figures stand on green grass. This flag measured 41 inches square. 103y is black with the stars in white, and is possibly the banner of either the komturei of Ascheraden or that of Dunaburg, since both their commanders fought under it. Similarly, the black and white flag depicted in 103z might belong to either the komturei of Fellin or of Kurlanth, though a second, identical flag captured at the battle was carried in a division commanded by the advocate of Kokenhausen. 103z was 47 inches x 50½ inches with tails of 23½ inches, its counterpart being smaller.

104. GERMAN KNIGHT, ERZBISCHOF VON TRIER 1312

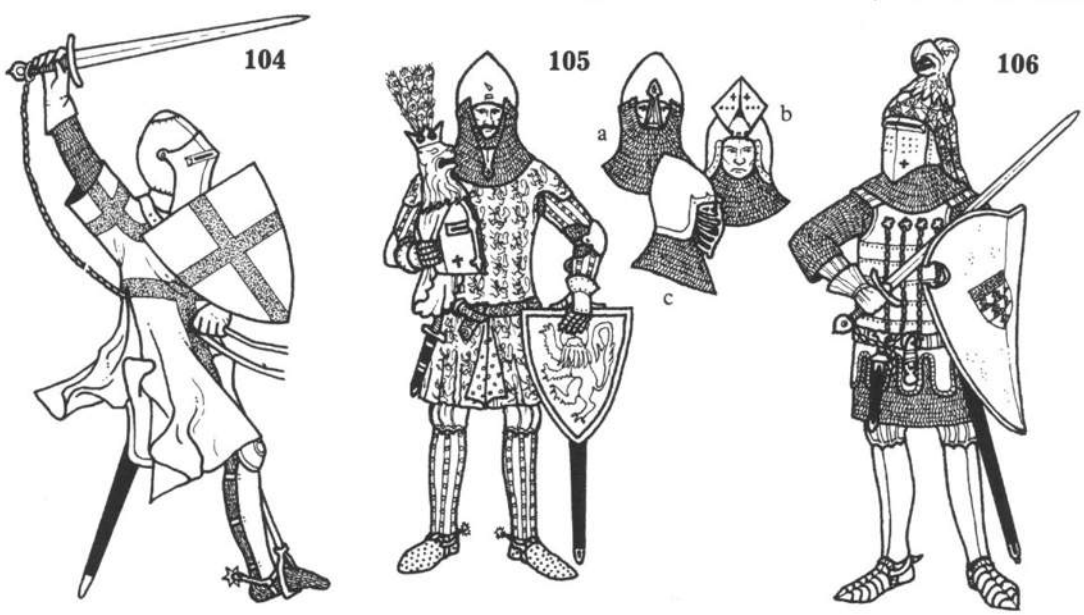
The ensuing sequence of 9 figures follows the general evolution of armour in Germany during the 14th and 15th centuries, beginning with this early-14th century figure from illustrations in the codex of Baldwin von Trier, depicting events during Emperor Henry VII's *Romzug* of 1312. The short-sleeved surcoat doubtless conceals the usual layered body-armour characteristic of the 14th century, comprised of a quilted gambeson, a mail hauberk and a coat-of-plates, but the only plate armour visible is his greaves and the small poleyns affixed to his mail chausses. His gauntlets are of leather, though bag mittens also continued to be worn (as, for example, in the 'Manessa Codex' of similar date). Two other points to note are his *heaume* with its movable visor, a feature which appeared at the very end of the 13th century, and his rowel spurs. The latter first appear in a Spanish ms. of the 9th century but only begin to occur regularly during the late-13th century, usually having 6-12 points.

For fuller details of the development of individual elements of the armours described both here and below, see volume 1.

105. GERMAN KNIGHT, GÜNTHER VON SCHWARZBURG d.1349

This figure differs considerably from the last. His arms and legs are protected by leather strengthened with metal splints and rivets, a popular form of armour in Germany from the late-13th century until c.1380. Even in René d'Anjou's 'Traité de la Formes et Devis d'un Tournois' of 1447 it is related how *avantbras* and *gardebras* of cuirbouilli strengthened with 5 or 6 narrow splints 'the width of a finger' were worn in Brabant, Flanders, Hainault and 'other countries towards Germany'. His foot-armour is similarly of rivet-reinforced leather, Claude Blair observing that the Germans 'apparently had no great liking' for mail sabatons.

Although he carries a heaume (with a crest that is unlikely to have been worn in action) the helmet he actually



wears is a *bascinet à brèteche,* popular in Germany and Italy c.1340-70. This was a type of helmet in which the mail hood had an in-built nasal which could be hooked up to 2 studs on the brow of the helmet as shown in 105a. A form of visor, usually referred to today by its modern name of *Klappvisier,* evolved from this in Germany c.1360; this was hinged by the middle of its top edge to a vertical bar similarly attached by 2 studs on the brow of the helmet. 105b shows such a visor, from the tomb effigy of Konrad von Kronenberg (d.1372). 105c depicts a more unusual klappvisier from a Bohemian altarpiece of c.1380.

The type of armour depicted here also appeared in Italy, where it was introduced by German mercenaries; it is to be found in a large number of Italian illustrations of the second half of the 14th century.

106. GERMAN KNIGHT, WALTHER BOPFINGEN d.1359

The jupon became less popular in Germany after c.1350, and its abandonment means that we are now able to see the coat-of-plates (the *Spangenrock* or *Spangenharnisch*), possibly leather-faced, to which it can be seen that laminated shoulder-pieces are attached, as they often were until the end of the 14th century. The construction of Bopfingen's coat-of-plates is virtually identical to those found in the mass-graves on the site of the Battle of Wisby, which demonstrate that 3 upright plates were sometimes substituted for the single plate covering the chest. Note the guard-chains attached to this plate, up to 4 of these appearing in most German effigies of this date; normally there were 3, used to secure the sword, dagger and heaume (being attached to the latter by the insertion of a retaining bolt through a cruciform slot on its lower edge). The fourth chain shown here would have been attached to the shield (as, for example, in the effigy of c.1380 of Hüglin von Schoenegg, marshal of the duchy of Spoleto). It should be noted, incidentally that an oft-reproduced 19th century engraving of the Bopfingen effigy mistakenly only shows *3* chains. The earliest known contemporary reference to a guard-chain (in this instance for a helmet) dates to 1285, and the earliest depiction is the brass of Sir Roger de Trumpington, d.1289.

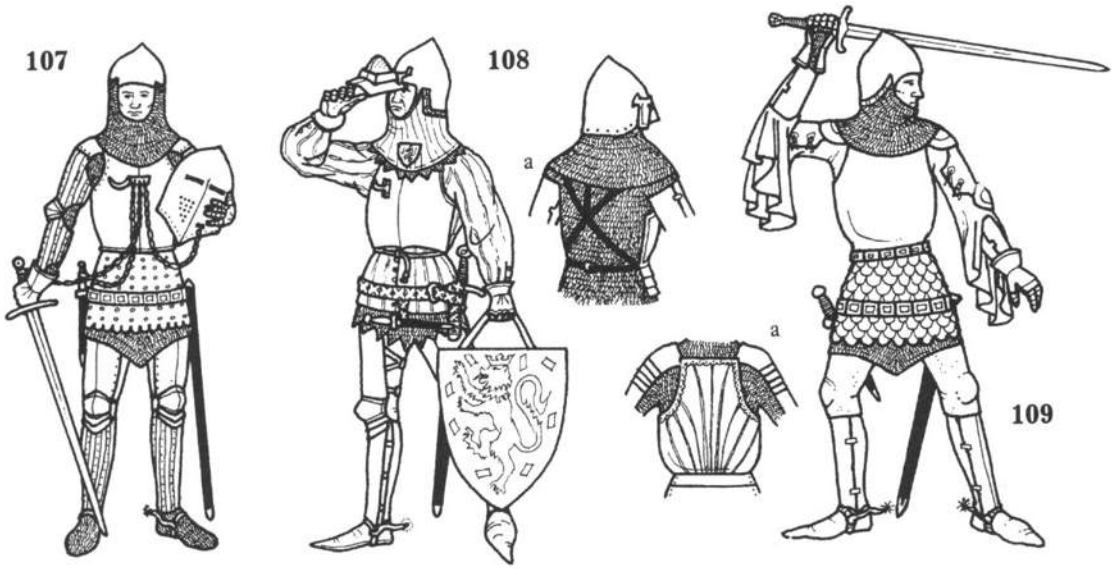
Other principal differences from the last figure include the substitution of plate greaves and sabatons for splinted and studded leather, and a short-sleeved haubergeon in place of the hauberk. Also, his shield is bouched, ie, it has a notch called a *bouché* cut into it in which the couched lance was rested during a charge. Such bouched shields seems to have actually originated in Germany, an almost identical one to that carried here being depicted in one effigy (that of Otto von Orlamünde) as early as c.1340. The inescutcheon of his arms on the shield is rather unusual but is to be found on several mid-century German effigies. It should be noted that the shield was apparently not abandoned in Germany as early as it was in England and France, still appearing regularly on German monuments until the 1380s and remaining very much in evidence even in the 15th century (see, for example, figure 118).

107. GERMAN KNIGHT, DIETER VON HOHENBERG d.1381

There are a number of obvious differences between the last figure and this Bavarian knight, the principal one being the evolution of the smaller plates of 106's armour into the single breastplate worn here, with its *fauld* or skirt of iron hoops, the whole being rivetted to a lining and cover of fabric. His arms and legs, however, are again only protected by splinted leather as described under 105. Indeed, the development of plate armour in Germany took somewhat longer than it did in England and France, and German effigies dating to as late as c.1430 continue to portray types of armour that had effectively disappeared from the latter countries by about 1380.

108. GERMAN KNIGHT, WALTHER VON HOHENKLINGEN d.1386

Walther von Hohenklingen was killed at the Battle of Sempach, for which see page 68 of volume 1. Like Dieter von Hohenberg he wears a breastplate, but this time it is unattached to any sort of plate fauld, being worn over a baggy-sleeved, quilted jupon (a *juppe de wambeson*) under which quite probably there is a coat-of-plates too, as well as the mail haubergeon. The breastplate is not accompanied by a backplate, but is held by 2 diagonal straps crossing over the back of the body as depicted in 108a here (from a late-14th century ms. illustration of the Battle of Sempach) and 6a in volume 1, which comes from a Bohemian ms. of c.1380. Such breastplates, independent of the coat-of-plates, are mentioned in written sources from c.1340 but do not seem to appear in pictorial sources until the 1370s. In both Germany and Italy they often had in addition a short apron of several horizontal plates to protect the stomach, as in 108a. In addition to the quilted jupon, which is buttoned down the front and along the outer edge of the forearms, he also wears a quilted hood over his mail aventail, the dagged edge of which can be seen protruding from beneath it. This has a small inescutcheon of his arms sewn on the front and is laced to the Hundsgugel bascinet along with the mail aventail.



Other points to note are the appearance of the lance-rest (*Rüsthaken*) on the breastplate, of which figure 107 is one of the earliest known representations, and the reappearance of full plate leg-harness. His feet, however, remain unarmoured, as seems to frequently be the case in German effigies.

109. GERMAN KNIGHT, KUNZ VON HABERKORN d.1421

From a tomb effigy in the church of the Knights of St John in Würzburg, Bavaria, this figure bears witness to one of the trends in German armour that was to prevail throughout the 1420s and 1430s, which was the incorporation into the armour of long sleeves, later dagged. Adopted under the influence of civilian fashion, these would appear to have been part of a tunic worn either over or under the arming doublet or haubergeon, but invariably under the breastplate. The scale skirt is unusual outside of Bohemia, but the fact that it was popular in the latter country at about this date is confirmed by the early-15th century Krumlov ms., in which many foot-soldiers and men-at-arms alike are shown wearing such skirts, which the ms. clearly shows to have been quite separate from the breastplate or any sort of corselet, being worn on its own by some figures.

His leg-armour clearly includes plate greaves, while seemingly poleyns and perhaps plate cuisses too are concealed beneath the fabric or leather breeches (?) that come down to just below the knee. The breastplate would probably be accompanied by a backplate by this late date, buckled at the sides until the mid-15th century (when a waist-belt often seems to have instead done the job of holding the plates together), and strapped across the shoulders. This slightly 'boxed' shape of breastplate, sometimes fluted as in 109a, was the most popular form of plate body-armour in Germany from the 1380s until the 1420s.

110. GERMAN KNIGHT c.1440

This figure is based chiefly on an altarpiece by Konrad Witz, with a few details (such as the spurs and gauntlets) added from another altarpiece, by Jan van Eyck, in St Bavon's Church, Ghent. The fashion of wearing complete plate-armour was introduced into Germany from Italy by c.1430, and this knight is comprehensively armoured so that not a single part of him is left unprotected.

His breastplate differs somewhat from that of figure 109 in that the upper portion now slopes distinctly forward, away from the chest, and then angles back towards the waist. Called a *Kastenbrust*, this form of breastplate evolved during the 1420s and remained popular until about the middle of the century. Thereafter it gave way to a flatter type, usually fluted, with a pronounced vertical ridge. The long fauld, typical of the 1430s and the early 1440s, is arched at the bottom for riding (some having tassets in place of the lowest 2 plates) and has a leather strap rivetted to either side for the sword scabbard and dagger.

His helmet is a 'great bascinet', strapped down to the breast and backplates. This type of helmet had first appeared in Germany by c.1420 at the latest, even though the ordinary bascinet of the last few figures continued to appear alongside it until about 1440. It was closer-fitting than those worn in England and France, which tended to retain the pointed crown of the earlier Hundsgugel.

111. GERMAN MAN-AT-ARMS c.1480

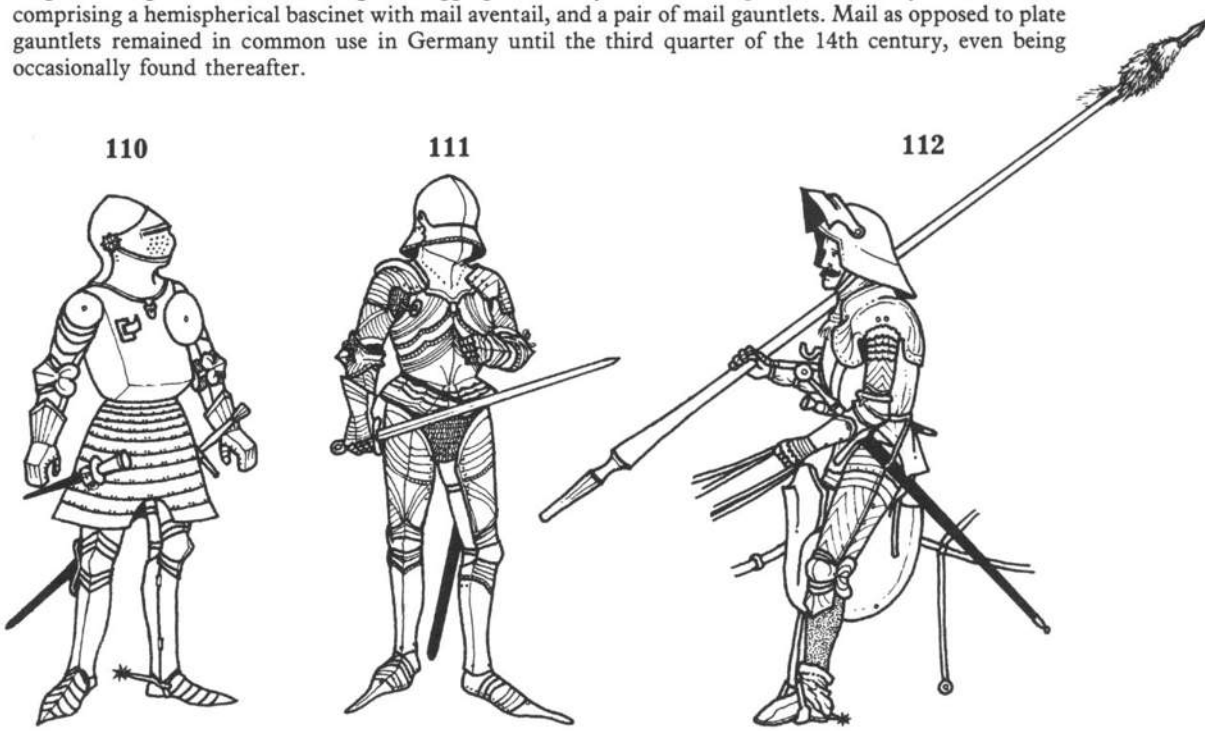
Probably one of the most widely reproduced suits-of-armour in the world, this full plate harness of Archduke Sigmund of Tyrol is the very epitome of German 'High Gothic' armour, with virtually every piece being decoratively ripple-fluted. As can be clearly seen, the deep fauld of 110 has diminished over the intervening decades until it now comes only just below the hips, a stage in its evolution that had been reached by as early as the 1460s. The breastplate had by this time similarly evolved as mentioned above, and was now strengthened by a two-piece plackart, connected at its apex to the bevor. His helmet is a sallet, called a *Tschelern* in Germany at the time of its first recorded appearance there in 1425, this becoming in time *Schallern*, the name probably originally deriving either from *Schale* (shell) or from a corruption of Italian *celata* (from which type of helmet it may have evolved). Indeed, the very first sallets in Germany were seemingly imported from Italy. They only begin to appear in contemporary pictures during the 1440s, and even then remained uncommon until the 1460s, thereafter becoming the predominant type of helmet to be found amongst German men-at-arms. Some were left unpolished, being called 'black sallets' as a result; surviving examples of this type are often painted or fabric-covered instead.

112. GERMAN MAN-AT-ARMS 1498

This figure, from a water-colour by Albrecht Dürer (an early study for his 'Knight, Death and Devil' engraving), wears a less complete version of the Gothic armour of 111, differing principally in his lack of sabatons, greaves, vambraces and bevor. Indeed, vambraces were often discarded in the last quarter of the 15th century since the cuff of the gauntlet now often covered most or all of the forearm, some actually reaching the elbow, where they were attached to the couter. Instead of a bevor he wears only a fringed hood like those of 118 and 119, while over his body-armour he wears a short jacket which is open at the front, where two narrow bands cross the chest diagonally. He sits (indeed, almost stands) high in his saddle, and is armed with a sword that could be wielded two-handed, a dagger, and a lance decorated with a fox-brush.

113. GERMAN MOUNTED CROSSBOWMAN c.1320

Pictures of mounted crossbowmen are uncommon in contemporary sources and when found usually tend to depict them as indistinguishable from men-at-arms. This figure from the 'Manessa Codex' is an exception to this general rule, and in the original from which he comes he is shown participating in a cattle-raid with another such figure and a similarly-equipped lancer. Under his green-lined red surcoat he wears an off-white, long-sleeved gambeson and dark green leggings that may be tall riding boots, his only other armour comprising a hemispherical bascinet with mail aventail, and a pair of mail gauntlets. Mail as opposed to plate gauntlets remained in common use in Germany until the third quarter of the 14th century, even being occasionally found thereafter.



Mounted crossbowmen, somewhat like later dragoons, were expected to use their crossbows on horseback as well as on foot. As a result they were probably unable to use the belt-claw, windlass, or any other loading mechanism that required the co-ordination of both hands and feet (but see note to figure 16). Instead they were later to use either the expensive cranequin (in the case of wealthier men) or else the unsophisticated 'goat's-foot lever'. Cavalry crossbows were anyway invariably weaker than those used by infantrymen.

Mounted crossbowmen comprised the *Reisige* or armed retainers of a German knight's banner or lance, while a number of cities had their own units of mounted crossbowmen, probably mercenaries since burghers wealthy enough to fight from horseback preferred to do so in knightly fashion with lance and sword.

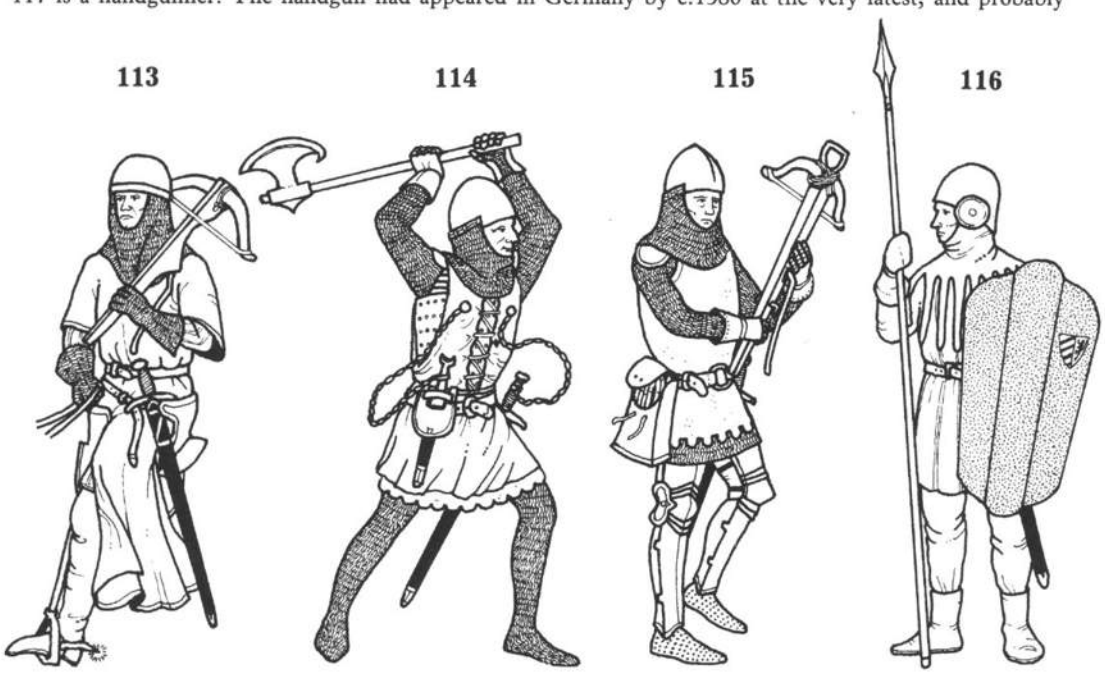
114 & 115. GERMAN INFANTRYMEN, MID-14th CENTURY

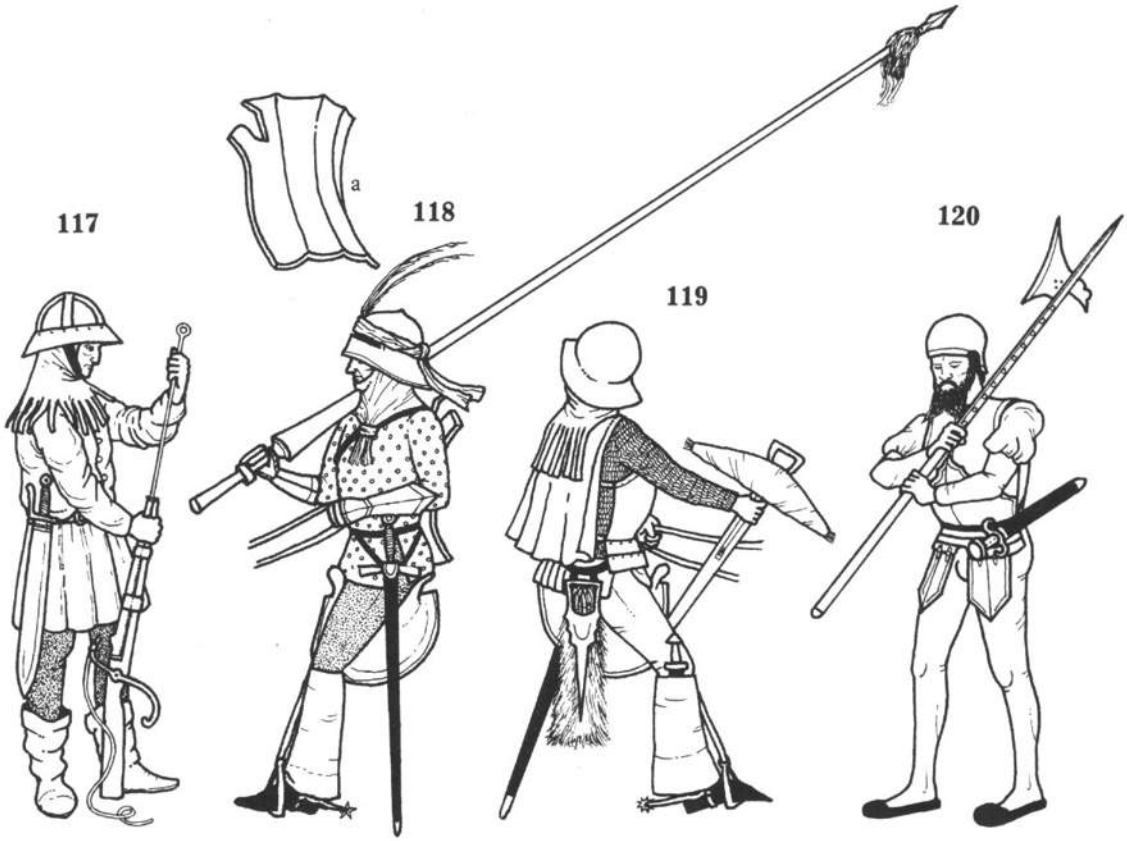
The arms and appearance of Western European foot-soldiers of the 14th and 15th centuries has already been covered in detail in volume 1 and it is not intended that the subject should be covered again here. The next 4 figures are therefore merely a selection of such German infantry as are likely to have been found in armies fighting in Central and Eastern Europe. The two specific figures depicted here are from sculptures of c.1345-50 at Strasbourg and c.1350-55 at Haguenau respectively. There is nothing particularly remarkable about their equipment, though 114's open-fronted surcoat with its deep arm-holes gives us another view of a coat-of-plates such as that worn by figure 106. Though mail chausses had generally disappeared elsewhere by c.1350, they remained in occasional use in Germany right up until very late in the 14th century. In the original, 115 is shown cocking his crossbow by the cord-and-pulley method, in which a cord with a hook at one end was attached to a ring on the belt, an eye at the other end then being located on the hook visible below the crossbow tiller; the crossbow string was hooked to a pulley attached to the cord, the stirrup then being used in the usual way.

116 & 117. GERMAN INFANTRYMEN, MID-15th CENTURY

These come from mss. of c.1430-40. Figure 116 is typical of lighter-armoured foot-soldiers of this period, wearing for his protection only a sallet with rondel ear-guards, and boiled leather gauntlets which are doubtless of the type seen by Bertrandon de la Brocquière in 1433, which in his opinion were strong as gauntlets of iron. Other men inevitably wore the usual mail, plate and brigandine armour of figures such as are depicted, for example, in figures 48, 70, 119 and 128 in volume 1. By this date shields, where carried at all by German infantry, were invariably pavises, for further details of which see notes to figures 123a-e below.

117 is a handgunner. The handgun had appeared in Germany by c.1380 at the very latest, and probably





about a decade earlier. Clephan, in his *Outline of the History and Development of Hand Firearms*, cites two references dating to 1375, but the earliest generally accepted reference dates to 1381, when the city of Augsburg is recorded to have had 30 handguns for use against the nobility of Saxony, Bavaria and France. Emperor Sigismund was accompanied by as many as 500 handgunners during his Romzug of 1431, probably a mixture of Germans, Hungarians and Italians, while one authority claims that by 1496 as many as one-sixth of all German infantry were handgunners. In 1480 Württemberg had perhaps as many as 800 handgunners amongst its 3,500 infantry, all of whom were uniformed.

Most handguns were brass-barrelled until the mid-15th century, when iron barrels came to predominate. The wooden stock, meanwhile, had widened to the point where it could be rested against or on the shoulder towards the end of the 14th century, and began to be slightly curved (as depicted here) about 1392. This particular gun is fitted with a serpentine matchlock as described under figure 114 in volume 1. Rammers were probably used in loading from the very beginning, since modern tests indicate that 'the gunpowder would not explode at all unless it was rammed well down, with adequate wadding', hence 'the very long stocks fitted to the early guns must have been to assist this operation.'*

118. GERMAN CAVALRYMAN c.1480

This figure and the next come from the 'Das Mittelalterliches Hausbuch', the outstandingly detailed illustrations of which constitute a mine of information on late-15th century costume and armour. For protection he wears a long-sleeved jack, mitten gauntlets (*Hentzen*) and a plumed sallet worn over a fringed hood of a type that was highly popular in 15th century Germany (see also 112, 119 and 124-126). A scarf is tied round the helmet. In addition he carries — rather unusually for this late date — an angular, bouched shield, shown slung at his back; its shape can be seen more clearly in 118a. The tall riding boots, usually turned down below the knee, are characteristic of this date, and generally seem to have been either black or dark brown.

Other figures in the same source wear a varied selection of shoulder capes, cloaks, hats, caps and tunics, the somewhat globular body-shape of some of the latter doubtless indicating a breastplate worn underneath.

*Alan R.Williams, *Some Firing Tests with simulated Fifteenth-Century Handguns.*

Breast and backplates with faulds and arm-harness (but not leg-harness — see also 112) are also to be found, as are long-sleeved mail corselets.

The few cavalry to be found in Swiss armies of this period, such as the 1,800 supplied by René, Duc de Lorraine, and Alsatian and Swabian noblemen at Morat in 1476, and the 3-4,000 at Nancy in 1477, would have resembled this figure and the next.

119. GERMAN MOUNTED CROSSBOWMAN c.1480

From the same source as the last, this figure wears a munition half-armour of breastplate and fauld over a short, long-sleeved mail haubergeon. His fur-covered quiver is characteristic of those in use in Germany, Switzerland and most of Eastern Europe in the 14th and 15th centuries. Other particular details worthy of notice are the dagger thrust into the top of his boot, and the waterproof leather cover protecting the string of his crossbow, often referred to in use throughout this period but only rarely to be found depicted in contemporary illustrations. The crossbow itself is often depicted suspended from the saddle-bow at left or right.

120. LANDSKNECHT c.1500

From a ms. of 1502 depicting German mercenaries in Danish employ, this is one of the earliest detailed depictions of a *Landsknecht* that has come down to us. Although armour was apparently uncommon amongst the early Landsknechts it is significant that in this source most men wear a breastplate with fauld and tassets, though no backplate (as was to become customary amongst them in the 16th century), and the majority wear pot-shaped sallets as depicted here, though soft caps are also to be seen. The slashed costume characteristic of 16th century Landsknechts had not yet been adopted, though bright colours certainly prevailed from the outset. Arms comprised the *Katzbalger*, a short sword about 28 inches long with S-shaped quillons that was generally worn hilt downwards as depicted, and either a pike or a halberd. Others were arquebus-armed handgunners. One of the illustrations in the original shows the Landsknechts drawn up in typical square battle-array with their pikemen forming the outer ranks with their halberdiers and banners enclosed in the centre.

121. BOHEMIAN INFANTRYMAN c.1400

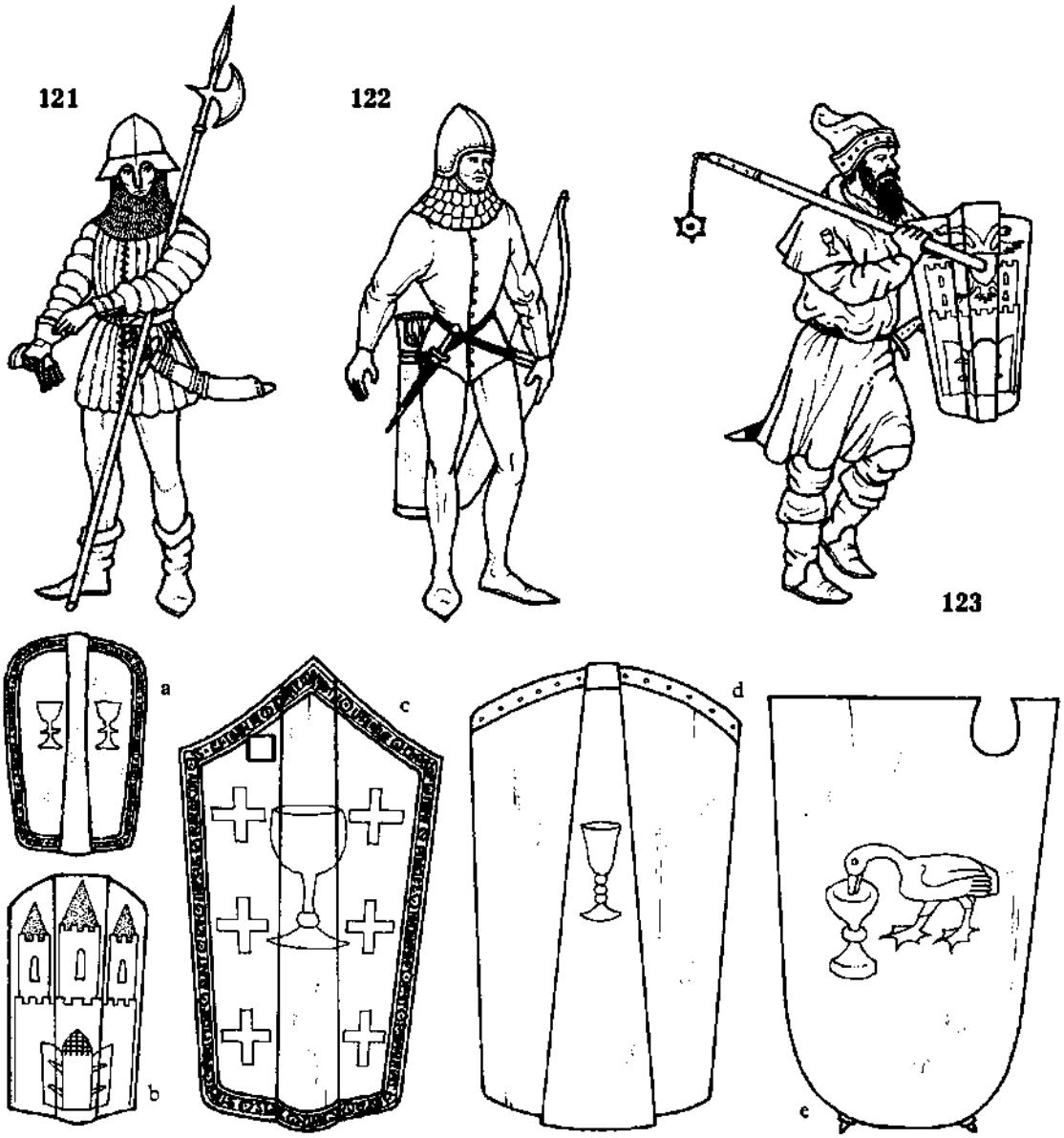
Based primarily on illustrations in the 'King Wenceslas Bible', this figure is representative of the troops who made up the Prague levy and other Bohemian civic militias. He wears a thickly-quilted gambeson, laced (or sometimes buttoned) down the front, and with underarm vents for ease of movement; others are shown entirely sleeveless. Note that the sleeves are buttoned tight at the wrists to allow gauntlets to fit over them (this detail being from a ms. of c.1384). Other men would have been more heavily-armoured, Bohemian towns being supplied with some armours by the crown, which the municipal authorities then added to — Vysoke Myto, for example, had 300 pieces of armour, and Hradec Kralove 400, in 1362. Such armours were used both to equip mercenaries and poorer citizens (the citizenry being obliged to perform military service at their own expense whenever called upon, 2 quarters of the town at a time in Prague in 1371). Such militia infantry nevertheless usually only had the upper half of the body protected, regardless of the fact that a number of contemporary Bohemian sources show leg-harness being worn.

Though he carries no shield assorted mss. depict pavises, bucklers, oval and even large heater-shaped shields, the latter often with bosses, all in widespread use. His helmet dates to c.1380 but is of a type that could still be found in use even a century later. Indeed, the kettle-helmet remained the most popular type of helmet to be found amongst the infantry and less heavily-armed cavalry of Bohemia and elsewhere in Central and Eastern Europe until the end of this era. The type worn here, with the brim shaped into eyebrow ridges and with a long, outward-curving nasal, was characteristically Central European. The bascinet, as worn by 122, was the next most popular helmet-type, from the first half of the 14th century to the mid-15th, while the sallet only first occurs in Bohemian written sources in 1441, and in pictures a little earlier.

His side-arm is a falchion, called a *tesák* in Czech. Often scimitar-like in form by the end of the 14th century, it was adopted in neighbouring countries during and after the Hussite wars, becoming *tasak* in Polish and *Düsack* in German.

122. BOHEMIAN ARCHER c.1400

Also from the 'King Wenceslas Bible', where he is depicted in a prince's retinue, this figure betrays Eastern influence in his Asiatic-style quiver with the arrows point-uppermost; in the use of a bow-case to carry his



short self-bow; and in the scale hood attached to his bascinet. A number of Bohemian sources depict similar archers, and others more heavily equipped in brigandines, haubergeons and arm and leg-harness, riding and even occasionally firing from horseback.

123 & 124. HUSSITE WAGON SOLDIERS

At the start of their revolt the majority of Hussites were armed with little more than peasant weapons, with slings, bills, scythes and, above all, flails predominating. In fact the Bohemians were noted for their military flails even before the Hussite wars — Konrad Kyeser, for example, at the time living in Bohemia, recommended the use of flails in his military treatise of 1405 — and the *Behemisch drischel* ('Bohemian flails') subsequently achieved a notoriety that was to last right up to Maximilian's time. The Hussites called their flailmen *cepnici*, and one such is depicted in 123, based on a contemporary drawing of one of the Taborite brethren. One detail worthy of notice is the small red chalice, the symbol of the Hussite movement, embroidered on his hood for identification, seemingly a common practice amongst the Hussites. His pavise (*pavézy*) and secondary armament are added from other sources, the latter being a variety of short, slightly-curved, single-edged sword popular in Slavic countries as far apart as Bohemia, Poland and Serbia. The pavises shown in 123a-e demonstrate the considerable variation in the size and shape of such shields; the larger ones (sometimes called *taras* in Bohemia) would have been used by crossbowmen and handgunners,

while the smaller ones were for other foot-soldiers and horsemen. They were usually brightly painted and often had biblical texts in Gothic script running round the rim as in 123a and c. All of those shown here carry Hussite motifs — the chalice on 123a, c and d, variously painted in yellow, red or black and often accompanied by stylised blood-drops; the goose on 123e (see note to 129d); and the Taborite symbol of a white castle with open gates on 123b and the pavise held by the main figure, which has in addition an escutcheon and double-headed eagle. The use of a small escutcheon to display the arms of a particular town or lord was commonplace. Other shields bore instead St Wenceslas or David and Goliath, or even a combination of these motifs with a chalice and/or an escutcheon, and all usually had decorative backgrounds of scroll-like foliage or geometric patterns. Surviving examples confirm that many were elaborately painted with a plethora of minute detail.

124, based on a Hussite stele, is a wagon-driver, complete with his long whip. He wears typical 15th century Bohemian dress, in this instance comprising a characteristic sleeveless, cross-over style topcoat, plus a hood and fur-brimmed cap. The large wallet-cum-satchel at his belt was apparently also typical if 19th-20th century Czechoslovakian paintings can be trusted. Wagon-drivers customarily rode the near-side rear horse of a four-horse team.

Note that neither of these figures wears any form of metal armour, which fits with a contemporary German chronicler's description of Zizka's troops as 'peasantry without proper armour, using only flails, clubs, crossbows and spears.' However, the Austrian ordinance of 1431, doubtless copying Hussite practice, specifies that as well as a sword, knife and 'iron hat' each wagon soldier must equip himself with a pair of iron gauntlets and a breastplate or at least a *Schiessjoppen* or padded jupon. In addition each handgunner had to bring one pound of bullets and each crossbowman a minimum of 10 bolts.

125. HUSSITE HANDGUNNER

The earliest surviving written reference to the use of handguns in Bohemia dates to 1383, when one blew up in the hands of an 'archer', fatally wounding him. At that time the handgun was called a *puska*, a term which could then equally refer to a cannon. It was after the failure of Emperor Sigismund's first crusade against them in 1420 that the Hussites adopted the handgun, largely as a result of a number of towns and their artisans rallying to Zizka's cause so that he was able to equip many of his men with handguns during the respite of 1422-27. It has been estimated that in 1429 as many as 3,000 handguns were employed in Prokop the Bald's combined armies, and certainly Oman claimed that the Hussites were the first to use the handgun on such a grand scale. He wrote that by the end of the Hussite wars 'it is said that nearly a third of the army' were using handguns, and that when the armies were subsequently disbanded 'Bohemian soldiers serving as mercenaries. . . usually . . . were handgun men', most notable of them being those who served in Hungarian armies against the Turks. Regardless of all this, however, one should not lose sight of the fact that it was the crossbow that was the main Hussite missile weapon, outnumbering the handguns in their armies by up to 3 to 1.

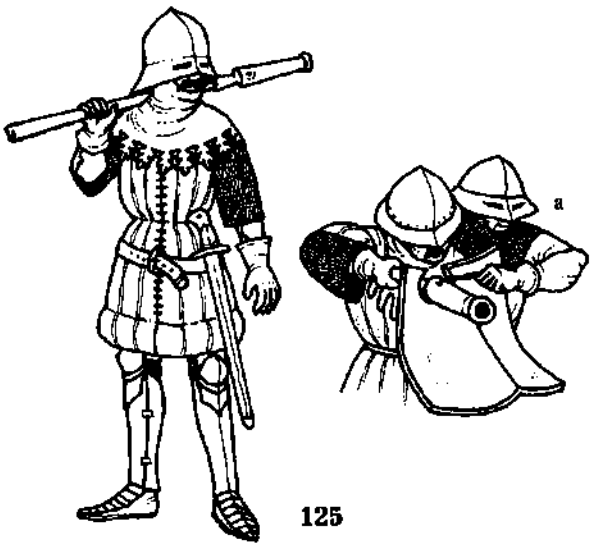
The figure depicted here comes from a picture of a Hussite wagon-fortress in a German ms. of 1437-50 in the British Museum. His handgun is of a short-barrelled type apparently developed by the Hussites and called a *píšťala* (meaning 'pipe' or 'whistle'). Silesian and Lusatian sources of 1427 refer to *pischolu*, *pischullen* and *pyschelin*, but the word pistala only first occurs in ungarbled form in the 1430s, after which the use of this type of gun spread to Germany and then Italy, where its name became *pistole*. It also spread to the Balkans and the Ukraine, Konstantin Mihailovic referring to such guns as *pisszuly* in his 'Memoirs'. A surviving example in the Museum of the Hussite Revolutionary Movement in Tabor is of iron with an overall length (including its socket) of 16¾ inches, an inside barrel length of nearly 10 inches, and a bore of just under ¾ of an inch.

Another picture in the same source, depicting a battle between Hussites and German crusaders, is of particular interest in that it shows a handgunner resting his pistala in the bouché of a shield as shown in 125a, while a companion reaches across from his left to apply a match to the touch-hole. This is one of the few pictures, and the latest so far as I am aware, to actually show the second man (called an *incendiarius* or 'firer', to distinguish him from the *collineator* or 'aimer') sometimes referred to in the written sources as assisting a handgunner in action.

126. HUSSITE CAVALRYMAN

Hussite cavalry were provided both by those of their movement who had previously served as elements of German, Bohemian and Silesian lances, and by the retainers of such Bohemian noblemen as supported the

124



125

Hussite revolt. Initially many of the former category had to be mounted on unhitched wagon horses on the field of battle, but later their horses were comprised largely of stock either captured from the Germans or Catholic Bohemian lords, or else purchased in Hungary. With the exception of the few landed gentry amongst them, and of the feudal lords and wealthier burghers of Prague, most Hussite cavalry wore incomplete harness usually comprising a helmet, mail hood and haubergeon supplemented by some plate. The later 'Jena Codex' shows even more lightly-equipped Hussite horsemen, seemingly crossbow-armed, who wear only a sallet (a type of helmet only first recorded in Bohemian sources in 1441, though it had probably in fact appeared there at much the same time as in Germany, ie, the 1420s).

Note that the shield of the figure depicted here is again a pavise, this being the characteristic shield of a Bohemian soldier (so much so that it is usually mistakenly regarded as being of Bohemian origin; for its true origins see figure 142). Its principal identifying features were its rectangular or near-rectangular shape, usually wider at the top than at the bottom, and the raised vertical rib, most often box-shaped. Arms usually comprised lance or crossbow and sword. Other popular sidearms included axe and mace, in particular a variety of the latter called a fist-and-dagger mace, really a war-hammer which took the form of a fist clutching a dagger as shown in 126a, which is a 14th century example. Jan Zizka himself customarily carried such a weapon, as is confirmed by several 15th century illustrations. A 15th century source describes how the people of Hradec decided to have Zizka painted on their banner 'riding a white horse, in knightly array, with a mace as his weapon, just as he rode when he was alive.'

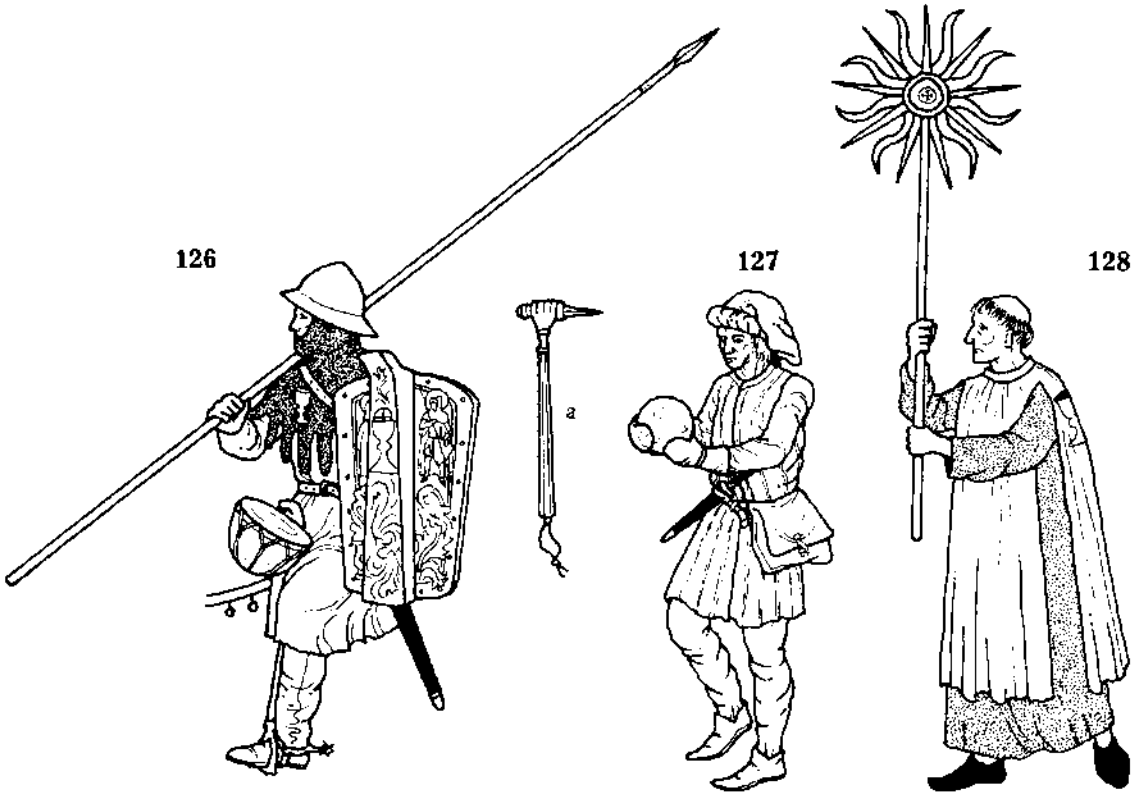
Note the small drums to either side of this figure's saddle, which along with trumpets were used to control the Hussite army's battlefield movements. One Hussite document says: 'When the trumpets sound they attack with gusto, and when the drums play they should come to a halt as quickly as possible and cease chasing the enemy.' According to popular legend Zizka's own skin was made into such a drum after his death, so that when it was beaten his enemies would still be frightened of him.

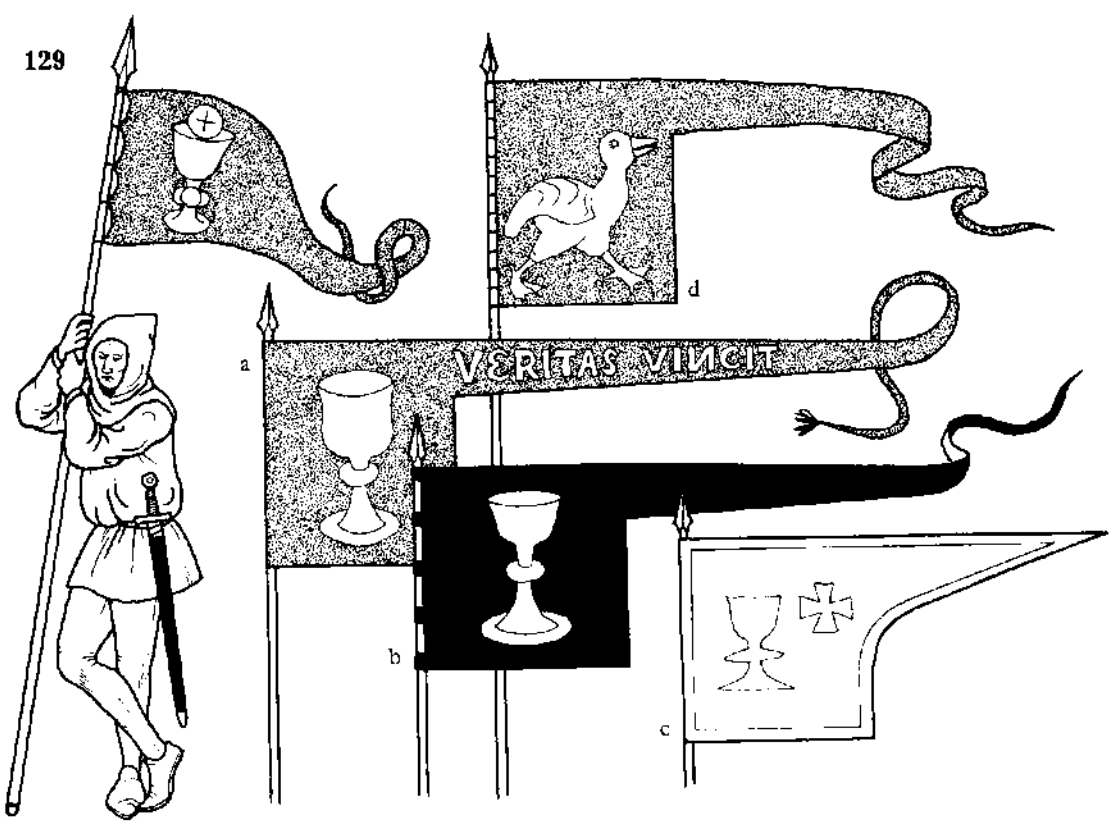
127. HUSSITE ARTILLERYMAN

This figure wears a rolled hood on his head, and a cross-over style gambeson, plus the large wallet-cum-satchel mentioned under figure 124. In his leather-gloved hands he carries a stone cannon-ball. Throughout Europe such stone shot was made by skilled artisans who were paid very high wages, receiving as much as a man-at-arms by the end of the 14th century.

128. UTRAQUIST PRIEST

The term 'Utraquist' derived from one of the Hussites' principal religious demands, which was that laymen as well as priests should receive communion under both kinds (*sub utraque specie*), ie, should partake of the wine as well as the bread in Holy Communion — hence their adoption of the chalice as the symbol of their movement. Many of the Hussite movement's early war-leaders were priests who, being men of the cloth


126
a
127
128


129
a
VERITAS VINCIT
b
c
d

rather than men of the sword, apparently based their military advice and teaching on the works of classical Roman authors. One modern authority has even attributed Jan Zizka's battlefield tactics to his familiarity with Vegetius' 'Epitome rei militaris'. Zizka's successor Prokop the Bald was himself a former priest.

This particular figure, from the same source as 125 (where he is shown before Zizka at the head of a column of Hussite infantry), wears vestments comprised of a white mantle over a brown cassock, plus black shoes; the chalice is added from another, later 15th century source. He carries a gold monstrance with a glass or crystal relic case at its centre.

129. HUSSITE FLAGS

As explained above, the chalice (*kalich*) was the symbol of the Hussite movement and it subsequently appeared on the majority of their flags, with or without the wafer. That carried by the main figure here, from the British Museum ms., is red with the chalice in gold and the wafer white, the standard-bearer himself being dressed in a green hood, a light tan tunic and off-white trousers. Judging from other accounts this is an infantry flag, these being described as generally red with a yellow or gold chalice thereon, this figure actually being shown in the original leading a body of flail-armed foot-soldiers. 129a, on the other hand, is a cavalry flag, this time from a Hussite battle-scene in the 'Jena Codex' ms. of c.1500. It is again red, with a gold chalice and inscription plus a blue and yellow tassel at the end of the tail or schwenkel. In a Bohemian source of 1437 flags of this particular shape are called, appropriately enough, 'banners with a long tail'.

129b is one of the signalling flags recommended in a later ordinance (of c.1450-75) that appears to have been confirming earlier practice. These were flown from the leading wagons on the outside of a Hussite column, being on one flank white with a red chalice on one side and red with a white chalice on the other, and on the opposite flank black with a red chalice and green with a white chalice.

129c shows a variant Hussite flag depicting a cross as well as a chalice, from a Bohemian relief carving of the first half of the 15th century. It appears in addition to have a fringe.

Lastly, 129d depicts another popular Hussite emblem, being a goose, sometimes shown drinking from the chalice. In this particular example the flag is characteristically red, with the goose in white with a yellow beak and yellow webbed feet.

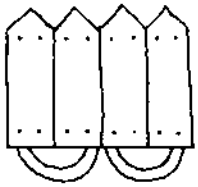
130. HUSSITE WAR-WAGON c.1430

When the Hussite wars began in 1419 ordinary peasant wagons were used — albeit undoubtedly strengthened where possible — but as time went by special war-wagons were developed, reinforced with wooden hoardings and iron or steel cladding. That illustrated here is based on contemporary sources and modern-day Czech reconstructions. It has a hinged, folding hoarding for added protection on the side facing the enemy (130a shows an alternative type of hoarding from a German ms.), plus a thick plank pierced with loopholes suspended beneath the wagon (removed when on the march). The side of the wagon behind the hoarding was further reinforced by a trough of stones, also used for throwing; the British Museum ms. shows a Hussite soldier throwing a rock from a wagon by hand, and Hussite boys were trained to use the sling and staff-sling. The other side of the wagon included a drawbridge-like ramp which permitted its crew ease of access and egress in action. When fully developed, Hussite wagons contained all sorts of tools and equipment, contemporary records listing 2 axes, 2 spades, 2 pickaxes, 2 hoes, 2 shovels, lances with hooks, plus a long chain with hook and ring for coupling the wagons together in battle. In addition each wagon also carried a movable wooden mantlet that was used to fill the gaps between wagons when they were drawn up in laager. Each wagon was drawn by 4, later 4-8, horses.

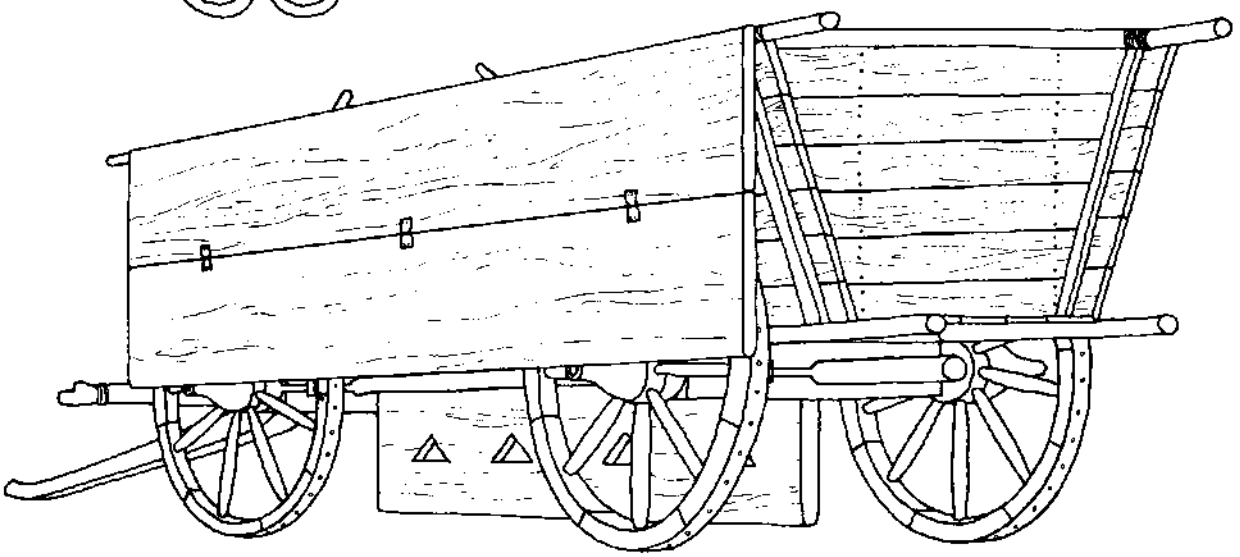
Hungarian war-wagons would have undoubtedly been virtually, if not absolutely, identical to those described above, since it was probably under Bohemian influence that the Hungarians began to assign a more important battlefield role to their own wagons during the 1440s. The Germans too adopted war-wagons from the Bohemians, even fielding them against the Hussites in 1427, though with a notable lack of success. In Austria in 1433 Brocquière was shown wagons 'which the Duke of Austria had constructed to combat the Bohemians.' Those he saw could carry 20 men like the Hussite wagons, though his guide assured him that there was one that could hold 300 men but still needed only 18 horses to draw it!

131. GERMAN WAR-WAGON c.1480

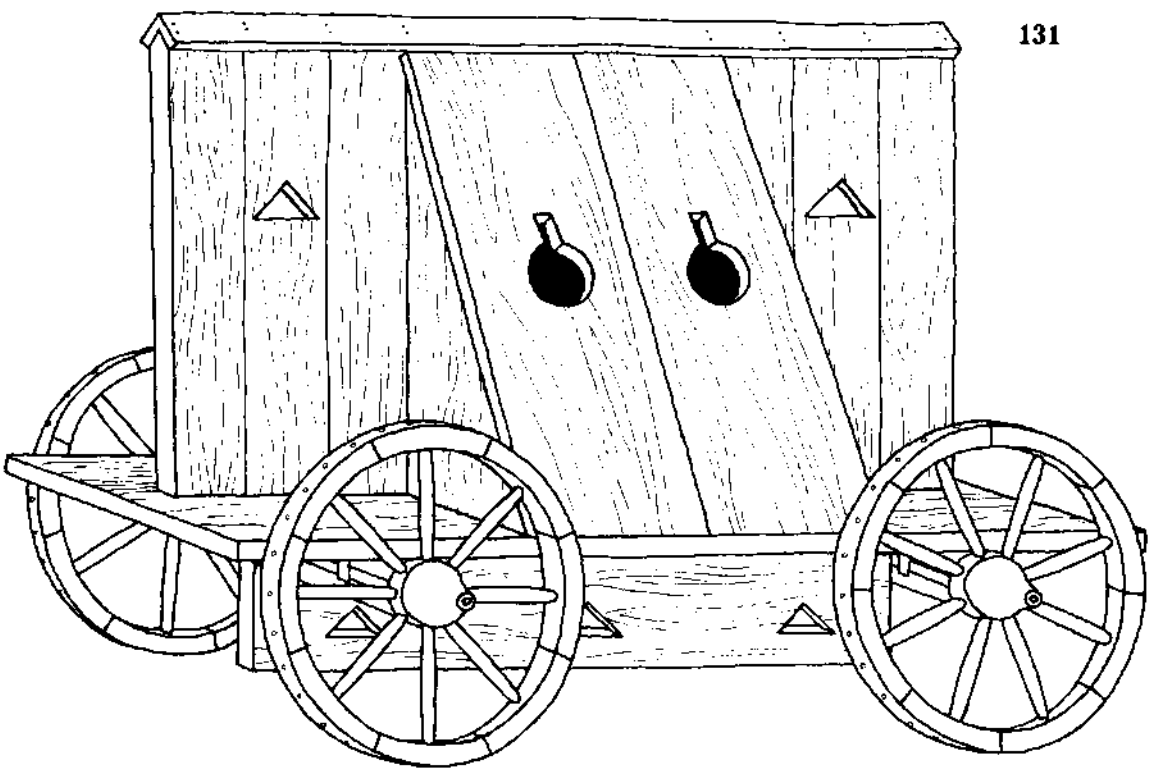
Taken from the 'Das Mittelalteriche Hausbuch', this shows a development of the Hussite war-wagon that



130



131



was in use by the second half of the 15th century. It differs principally in being a wheeled pavise rather than a true wagon. The box-like structure in the middle, repeated on the other side too, comprised a pair of sliding doors behind which a gun could be mounted when the wagon was stationary. On the march such wagons were placed on the outside of the column, protecting the infantry and baggage train in the centre (cavalry formed the vanguard and rearguard). Similarly, in camp and battle they were drawn up end to end to form a stockade, with the army's tents set up inside and the baggage wagons forming a secondary defensive circle in the 'place', or centre of the camp (hence supply wagons being referred to as 'place wagons'). Clearly these wheeled pavises were substantial constructions since the illustrations show that 4 horses were needed to draw them.

The Poles, who had been using wagons in battle long before the Hussites, took the technique of defending marching columns another stage further by adding thick mantlets to a frame projecting out alongside the wagon's horses in order to protect them against missile fire, while the Russians carried additional wooden mantlets pierced with loopholes that could be thrown up at short notice to provide protection for their infantry.

132. POLISH KNIGHT c.1340

As this figure from the seal of Duke Troyden of Mazovia (d.1341) would seem to confirm, Polish armour of the first half of the 14th century remained very similar to that described for the late-13th century in *Armies of Feudal Europe*, similar harness surviving in use in Lithuania and parts of Poland even as late as the 17th century. His corselet is of lamellar, buckled down the front, whilst his helmet is a *kapalin*, indicating Lithuanian influence. 132a shows the more usual variety of helmet to be found in use in Poland during the earlier part of this period, basically the old sugar-loaf heaume with a lambrequin and a painted, leather-covered wooden crest topped with peacock feathers. Winged helmets such as those shown in *Armies of Feudal Europe* also remained in favour during the early decades of the 14th century (being shown, for example, on the seal of King John of Bohemia), but were rather rare. His shield is a Lithuanian pavise (see figure 142), seemingly reinforced with vertical rows of small metal rings.

133. POLISH KNIGHT c.1380

Armour such as that depicted here probably began to appear in Poland c.1360. It is exactly the same as that to be found in use throughout Western Europe, though it inevitably corresponds more closely to that worn in Germany than elsewhere, in particular in the use of splint and stud-reinforced leather arm and leg-harness as described under figure 105. The development of Polish armour thereafter paralleled that of Germany for the rest of this period, Polish and German knights being so indistinguishable from one another that the former felt the need for not only a password but also a field-sign (a knot of straw round the upper arm) for recognition purposes at the Battle of Tannenberg. Though the barrel-helm continued at first to be worn with such armour it was soon replaced by the bascinet, with or without a visor. Note the helmet-crest, which apparently continued to be worn in battle in Eastern Europe until at least the end of the 14th century, many even appearing at Tannenberg.

134. POLISH KNIGHT 1428

This figure is based on the incised grave slab of the celebrated Zawisza Czarny of Garbow, one of the heroes of the Battle of Tannenberg. Together with many other Poles he later served under Sigismund during the Hussite wars and commanded those of the Emperor's troops who covered his retreat by their courageous defence of Nemecky Brod in 1422. He died in battle against the Ottomans in 1428, still in Sigismund's service, being the 'Sir Advis, a Polish knight' whom Brocquière records killed at Golubac. With the exception of the helmet, his armour is again no different from that in use further west, probably the work of one of the many German armourers who had been encouraged to settle in Poland by the promise of such perks as tax-exemption. His shield, however, is of the old-fashioned heater type. The helmet he wears is an Eastern European development of the *chapeau de Montauban*, a type of kettle-helmet with eye-slits in the brim, that was in widespread use in Germany, the Low Countries, Bohemia and Poland alike.

135. POLISH MOUNTED RETAINER, 14th CENTURY

Called a *strzelec* (plural *strzelcy*), basically meaning a missile-man, this figure is typical of the lesser nobility called *wojt* and *soltys* (village elders) who went to make up most of the mounted element of a Polish man-at-arms' lance. His armour comprises a bascinet, poleyns, and a stuffed and quilted leather corselet over a mail haubergeon. Arms normally comprised sword, axe or mace, and a bow or, more often, a crossbow. The latter was often used from horseback, which makes it highly improbable that they were of the windlass type

claimed by some modern Polish authorities since it is hard to imagine how such weapons could possibly have been reloaded in the saddle. More probably they were the usual stirrup crossbows universally employed by mounted crossbowmen, which seems to be confirmed by 14th-15th century pictorial sources. A lance could occasionally be found substituted in its place, and a shield was often carried even with the crossbow, though they were beginning to fall out of favour with such troops by the early-15th century.

Note that the axe is still carried in its traditional position forward of the saddle. The throwing axe, or hurlbat, remained in use even in the 15th century in Poland, Lithuania and Bohemia alike, being used to deadly effect in cavalry charges.

136. POLISH MOUNTED FREEMAN, 14th CENTURY

Scale armour remained popular in Poland throughout most of this period, surviving in widespread use in Lithuania until well into the 16th century. Such corselets as that worn here comprised iron scales mounted on a leather foundation, usually worn over a quilted gambeson. Unlike 135, mounted freemen tended to fight either on horse or foot depending on circumstances, armed with lance or crossbow in the former role, and with bow or crossbow, or heavy spear, axe or other polearm in the latter. The Polish bow was a longbow of about 5 feet in length, largely supplanted by the crossbow during this era. The handgun too was in use by the very end of the 14th century, probably adopted from Bohemia. Certainly a few were present in the Polish army at the Battle of Tannenberg, and a reasonable number dating to 1400-50, mainly brass-barrelled, have been found in Poland and Courland (Kurland).

137. POLISH MOUNTED RETAINER, 15th CENTURY

This figure, from a ms. of 1467, is typical of 15th century Polish cavalry other than men-at-arms. He wears a padded doublet over a mail haubergeon, which is completely covered, plus a mail hood, sallet, gauntlets and leg-harness. Shields are no longer carried, but a crossbow or lance remains the standard armament. In place of a sword this particular man carries a sabre (*szabla*), which frequently substituted for it by the second half of the century. The sabre was introduced from the East via Hungary, but was at first largely regarded by the Poles as an inferior weapon and was thus relegated to the infantry and non-noble cavalrymen. By the mid-15th century, however, Poland's upper classes had also adopted it, particularly in the Eastern provinces. It is interesting to note, incidentally, that most of the run-of-the-mill sabres that appeared in Poland, Hungary and other Eastern European countries actually originated in Italy of all places, where they were mass-produced as a profitable export line for the Venetians and Genoese in their dealings with the Ottoman Turks (via whose Balkan conquests they trickled back into Europe). Such mass-produced sabres were, fairly inevitably, of low quality steel and clumsy in design.

138. POLISH TOWN MILITIAMAN, 14th-15th CENTURIES

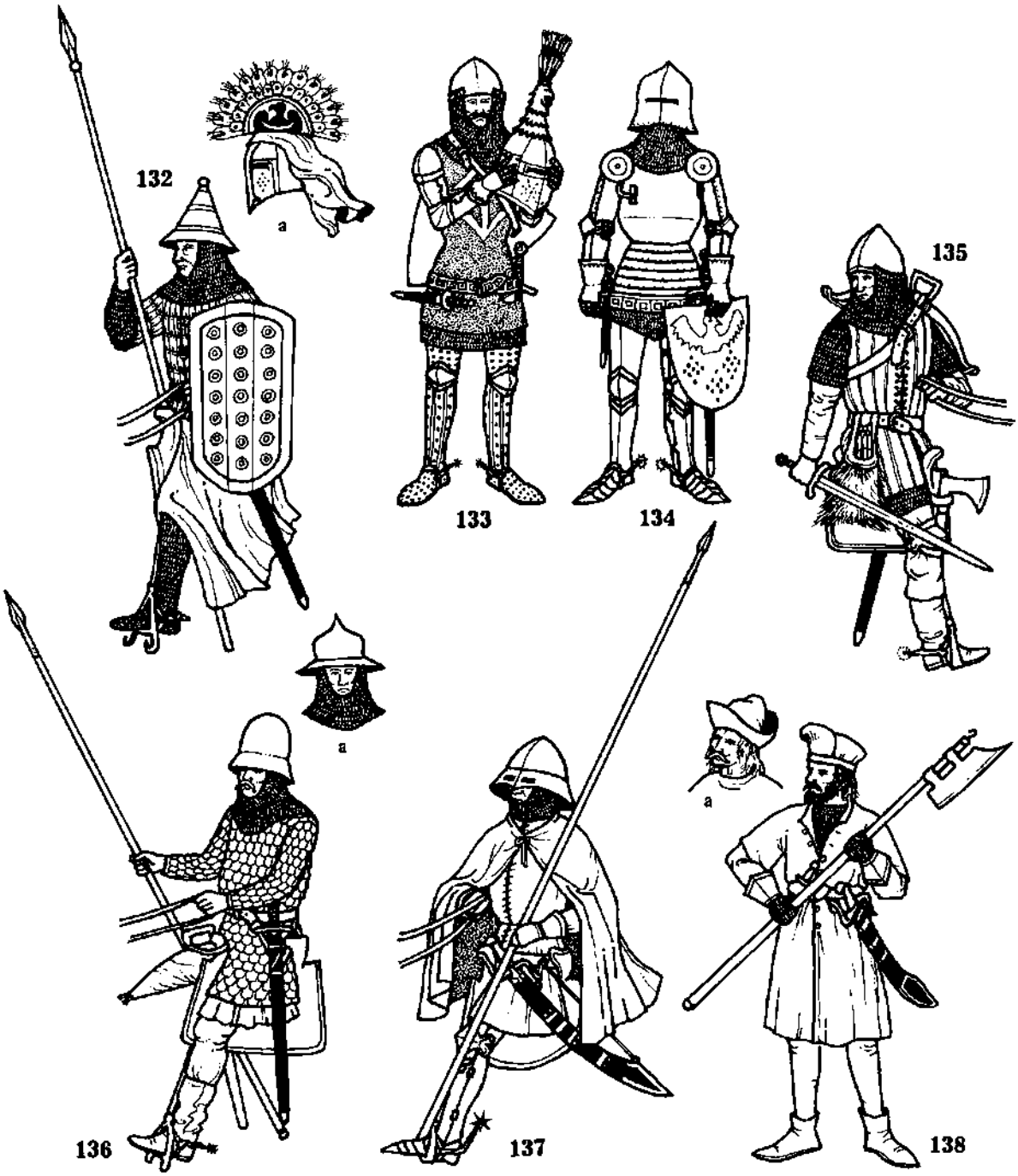
'Murderous rustics' the Teutonic Knights called them, a description doubtless prompted by both their fierceness in battle and their use of a vicious range of *berdische* axes and other lethal polearms which, wielded two-handed in battle, proved particularly effective against crowded horsemen. Maces and clubs were also popular, and for secondary armament this figure has a sabre. Shields were largely dispensed with since both hands were needed in action, though those armed only with mace or sword often still carried them. His armour comprises a short mail corselet under a leather kaftan, plus mail gauntlets with plate cuffs. The felt cap is one of a variety of similar types of headwear popular in Poland during this period, 138a showing an alternative reminiscent of Balkan styles. General clothing colours worn by the Polish lower-classes were the same as elsewhere in Europe, ie, principally many shades of brown, green, grey, blue and dark red. If the pictorial sources are to be relied on, reds and blues predominated amongst the upper classes.

All of the Poles depicted above are dressed and armed in native Polish styles. However, it should be noted that Polish mss. and paintings also show soldiers dressed and equipped identically to their German and Western European counterparts.

139. POLISH FLAGS

All of those depicted here were carried at the Battle of Tannenberg in 1410.

139a is the 'Great Banner' of the Land of Krakow, of red silk with the eagle embroidered in silver with its crown and sash in gold. This was the Polish royal standard, carried in battle by the Standard-Bearer, a nobleman appointed to the office by the king himself, who was accompanied in battle by a guard retinue



of about 40 knights. The banner of Poznan, carried in the Poles' fifth division, was virtually identical, differing only in having no tails and no crown or sash. The banners of the twenty-first and twenty-second divisions, under Prince Ziemowit of Mazovia, were seemingly identical to that of Poznan. 139b is the king's personal flag, similarly of red silk with the eagle in silver and the crown gold.

139c is the banner of the Company of St George, the fourth division at Tannenberg, comprised of Bohemian and Moravian mercenaries under Zbislawek and Sokol of Lamberg. This was the unit in which the future Hussite leader Jan Zizka fought. The flag was seemingly red with a white cross. It is significant, not to say confusing, that a similar banner (differing only in having a schwenkel) was carried at the same battle by a body of German mercenaries in the Teutonic Knights' army (see 103c). Jan Dlugosz elsewhere describes

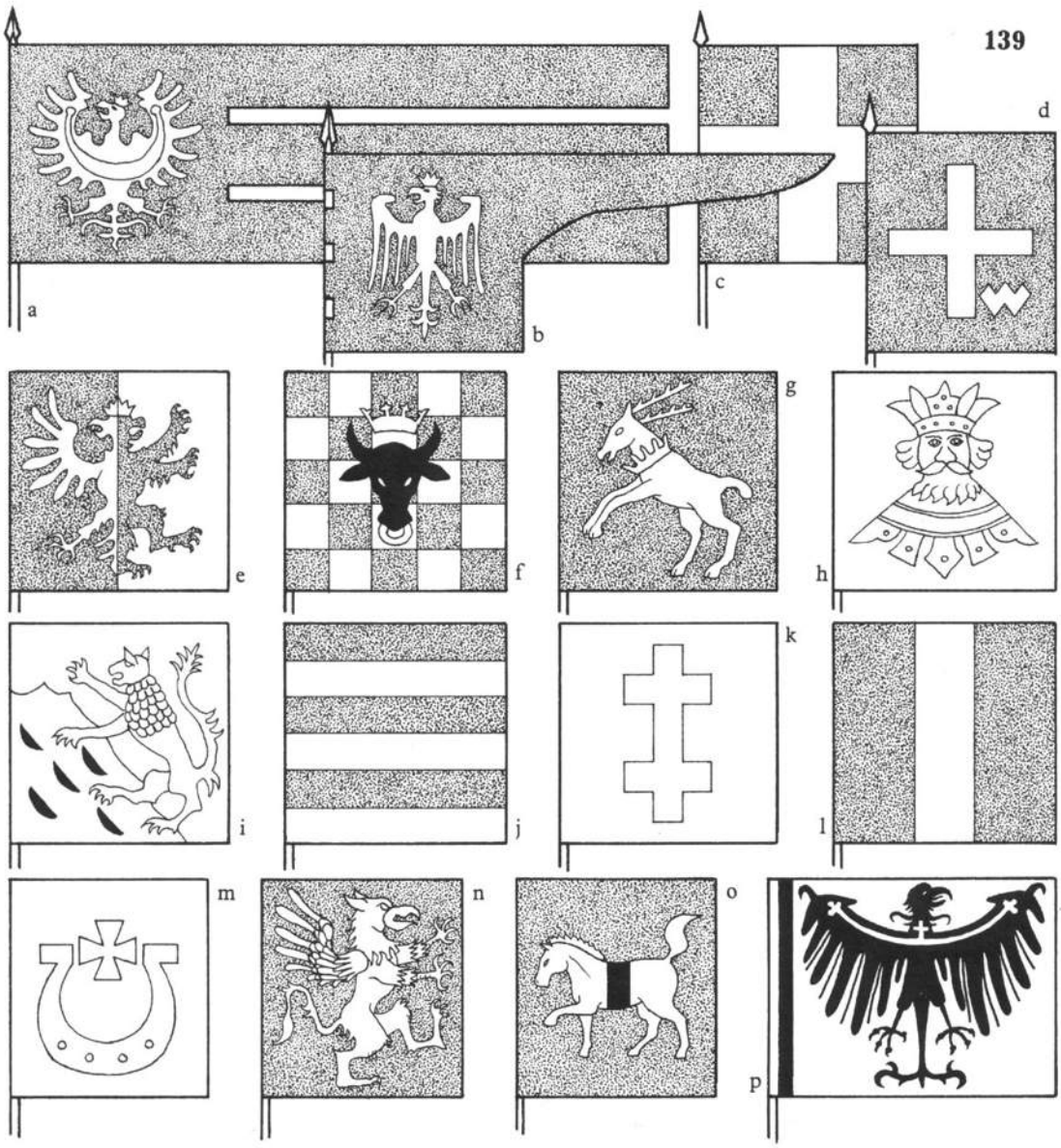
that of the Poles' Bohemian mercenaries as having a white 'W' in the fourth quarter as depicted in 139d which, however, was apparently the banner of Dobieslaw of Olesnica, commander of the thirty-eighth division.

139e is the banner of the Land of Leczyca, carried in the tenth division. It was red and white, with the crowns in gold. The banners of the lands of Sievadzka and Kujavia, carried by the eighth and eleventh divisions, were identical in style, though the former had the eagle black on yellow and the lion white on red, while the latter had both the eagle and the lion black on yellow.

139f is the banner of the Land of Halicz (Galicia), carried at the head of the seventh division. It comprises a black bull's head with yellow crown and nose-ring on a red and white check field.

139g is the banner of the Land of Lublin, carried by the ninth division. Red, with a white hart with gold horns and gorget.

139h is the banner of the Land of Dobrzyn, carried by the fifteenth division. Yellow, a king's head proper wearing a gold crown and collar, with two narrow white bands on the latter, and blue horns.



139i is the banner of the Land of Lwów, the capital of the Polish Ukraine, carried by the twelfth division at Tannenberg. It depicts a yellow lion climbing on a white and black rock, against a blue background.

139j is the banner of the Land of Sandomir. After Krakow and Poznan this was the third most important voivodeship of Poland. Carried in the sixth division, this was striped in red and yellow on one side, but on the reverse was blue with 3 rows of 3 white stars.

139k was called *Gonzca* and was carried at the head of the second division, commanded by Jedrzej of Brochocice. Blue, with a yellow double-cross.

139l is the banner of the Land of Wielun, carried by the thirteenth division which, because Wielun's forces were small in numbers, was bolstered with a large quantity of Silesian mercenaries. Red, with a white vertical band.

139m is the banner of Wojciecha Jastrzebiec, bishop of Poznan, which was carried in the twenty-fifth division by Jarand of Brudzewa. Blue, with a yellow cross and horseshoe.

139n is the banner of the Gryfow (Griffin) family, which was red with a white griffin. This was carried by the forty-sixth division, led by Zygmunt of Bobowa, *Podszdek* of Krakow. See also 103v.

139o is the banner of Piotra Szafranice of Pieskowaskala, *Camerarius* (Chancellor) of Krakow, carried at the head of the thirty-fifth division. Red, with a white horse encircled by a black band.

139p is the banner of Conrad, duke of Olesnica in Silesia, who fought on the side of the Teutonic Knights at Tannenberg. Yellow, a black eagle with red tongue and talons and a white sash and cross on its breast, plus a white hoist bordered by a black band. It measured 41 inches x 52¾ inches (which, together with the dimensions of other flags quoted under figure 103 should give some idea of the probable size of other flags described above).

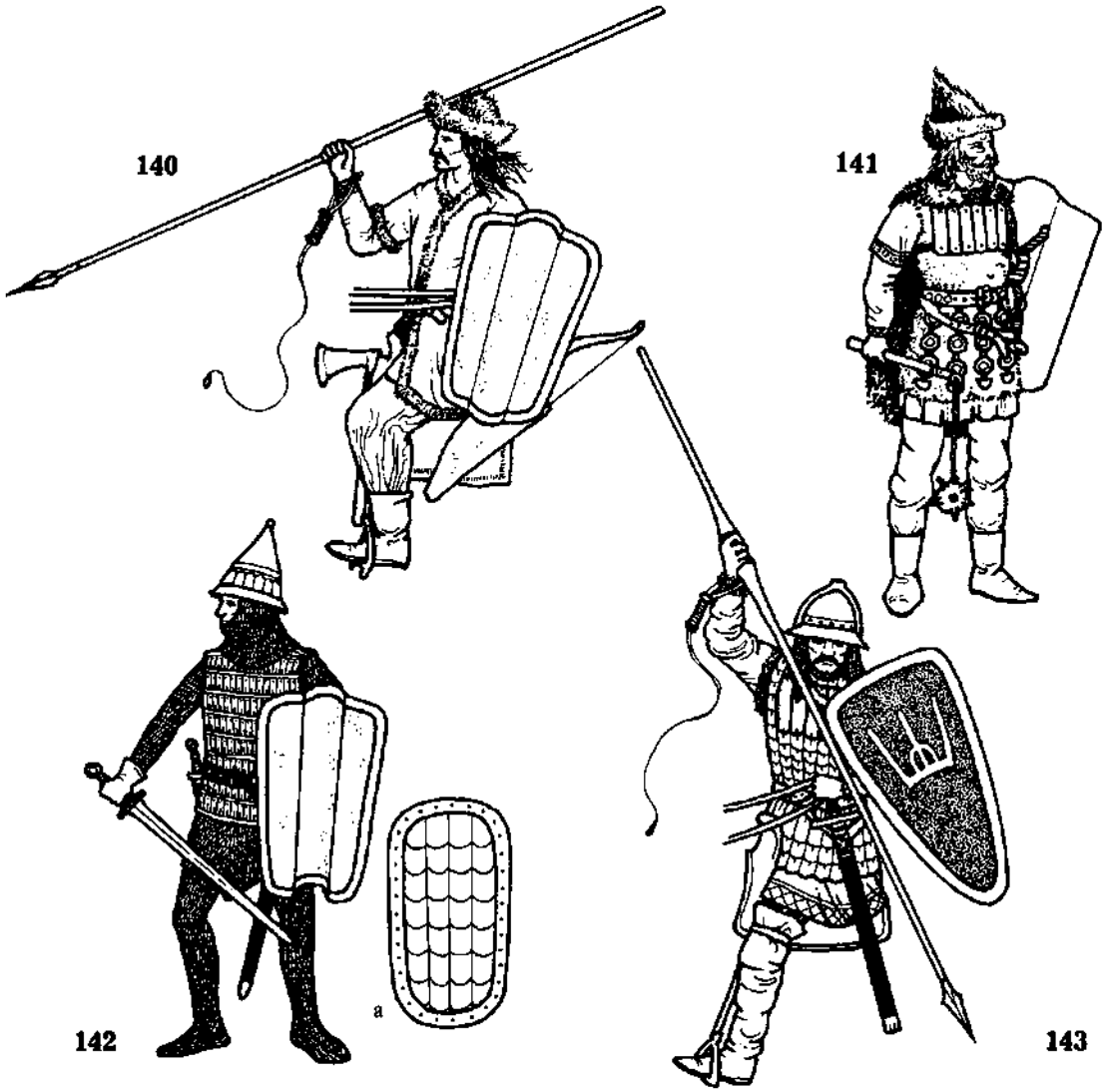
140 & 141. LITHUANIAN OR SAMOGITIAN WARRIORS

140 wears characteristic dress, in this instance comprised of a light brown short-sleeved kaftan with fur trim over a faded green linen shirt with embroidered cuffs, plus baggy woollen trousers, boots, and a fur cap. 141 wears a thick, sleeveless fur jacket in place of the kaftan. Indeed, the Lithuanians and Samogitians relied heavily on furs both for clothing and light armour, a jacket such as that worn here having defensive capabilities comparable to those of the quilted body-armours worn in the West. Some wore in addition a small amount of metal armour, but on the whole this was scarce to non-existent amongst those of less than boyar rank. 141's armour is fairly typical of that which might be found in use, comprising a pectoral of iron laminae held by thongs tied behind the neck and back, and a sort of cingulum of iron discs attached to leather straps. The plates of such pectorals were usually between 5 and 6 inches deep and between 4 and 12 in number, while the cingulum could assume a variety of forms, in the simplest of which studs replaced the iron discs.

Armament principally comprised a knife, an axe or mace, and a type of lance called a *spisa*, in the use of which the Lithuanians were masters. It was 8-9 feet long and was used to stab, slash and club in close combat as well as being light enough to be hurled javelin-fashion (hence Sienkiewicz's references in *The Teutonic Knights* to the Lithuanians' arms including 'light javelins'). In addition many carried a bow and a *nahaj*, a long whip tipped with a small lead weight, which doubled as a lasso in action; it can be seen here hanging from 140's right wrist. Swords were uncommon. The weapon wielded by 141 is a *kistien*, a variety of mace where the head was attached to a short handle by a chain or leather thong. Shields were either small and circular or, more usually, of pavise shape like that of 140, leather-covered, iron-rimmed and most often painted in red, green or black. For further details see 142.

During the 14th century other Lithuanians and Samogitians would doubtless have continued to resemble the figure in *Armies of Feudal Europe*, while the few Lithuanian infantry that were to be found would have resembled the Prussians in the same book, though with Lithuanian shields and fur hats for difference. (The continued use of fur hats, cloaks and jackets throughout this period arguably excuses the frequent description of Lithuanians as 'skin-clad' in both contemporary sources and modern accounts.)

The Samogitians, more thoroughly pagan even than their Lithuanian cousins (many remained unconverted



even in the 16th century), submitted to the Teutonic Knights in 1406, but revolted with Polish support in 1409; it was this revolt that ultimately led to the decisive confrontation at Tannenberg in 1410. By the Treaty of Thorn (1411) Samogitia became part of Lithuania.

142. LITHUANIAN BOYAR 1378

This figure is taken from the seal of Vytautas' father Kenstutis, Duke of Trakai 1345-82 and Grand Duke of Lithuania 1377-82. It depicts him in a characteristic mid-14th to early-15th century Lithuanian or Samogitian armour, comprising in this instance mail hood, chausses and haubergeon, plus a lamellar corselet and a kapalin helmet. His shield is of a type that is usually described as 'Bohemian' but actually occurs in Lithuanian and Mazovian seals from the 13th century on, the earliest known being that of Konrad of Mazovia in 1228, ie, long before the appearance of such shields in Bohemia. In fact Bohemian written sources of the 15th century actually refer to cavalry versions of the pavise as 'Lithuanian pavises', thus clearly confirming their Lithuanian origin. A modern Polish reconstruction based on this seal makes Kenstutis' shield red with an iron rim.

142a depicts a variant type of Lithuanian shield that was unusual but apparently not uncommon. Wooden and basically rectangular in shape, it has an iron rim and is faced with large iron scales.

During the late-14th century the senior Lithuanian nobility underwent considerable Western European

influence via Poland and the Ordensstaat. Grand Duke Vytautas' seal of 1385 depicts him in German armour very like that of 107, and he is recorded to have worn similar armour under a black surcoat at Tannenberg, such equipment doubtless being widely adopted by the wealthier Lithuanian boyars after the union with Poland.

143. LITHUANIAN BOYAR c.1390

This depicts another type of armour, likely to be found amongst the lesser gentry of Lithuania's lands in West Russia; undoubtedly it was troops equipped much like this that made up the 3 Smolensk contingents that fought so stubbornly at Tannenberg. His corselet comprises scales reinforced with long plates, and is worn over a long-sleeved leather jerkin trimmed with fur at collar, cuffs and shoulders. The brimmed helmet is an unusual variation of the kapalin type. His tunic is red, but in fact green was the predominant colour in Lithuanian dress. His long boots, held up by suspenders attached to a waist-belt (rather like mail chausses were), are of a type peculiar to Lithuania, Poland and Bohemia. Made of red, yellow or green leather, they were usually gartered above the knee, and sometimes cross-gartered all the way down to the ankle.

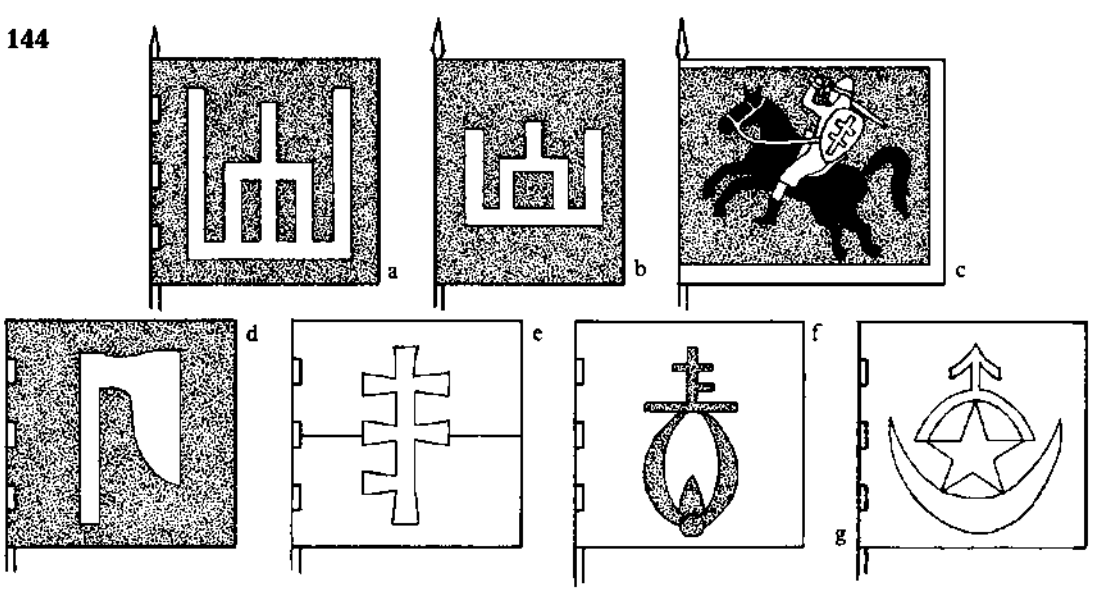
He carries a somewhat heavier version of the spisa than does figure 140, which could nevertheless still be used in addition as a javelin, plus a tasak, in this particular instance a square-tipped, one-edged weapon rather than a falchion (both types of tasak being popular amongst the Lithuanians and Russians). His shield is red with the 'columns of Gediminas' device in white (see 144a).

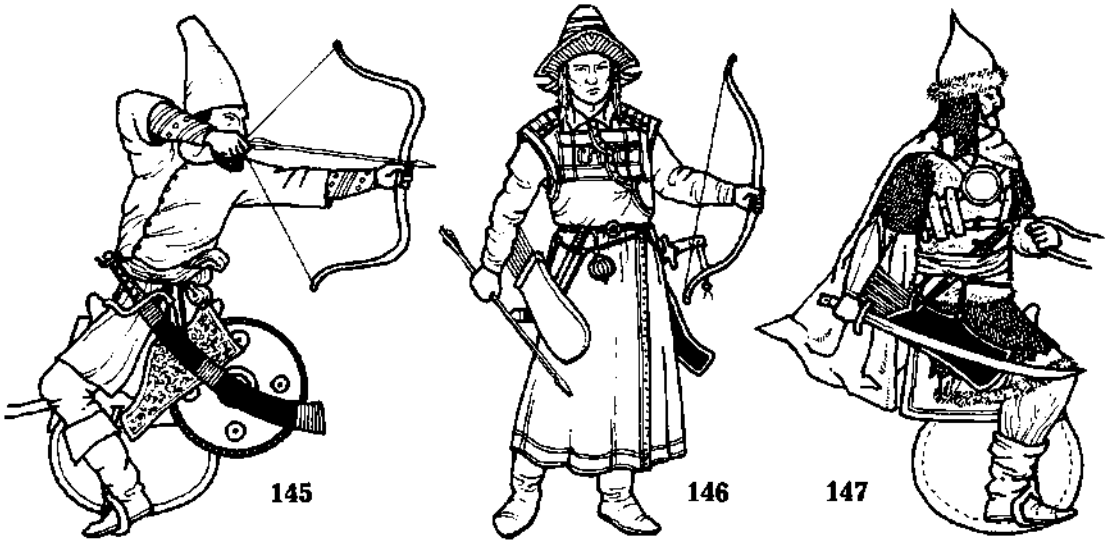
144. LITHUANIAN FLAGS

It has been suggested that prior to their (nominal) conversion to Christianity in 1386 a typical Lithuanian standard would have probably comprised a slain enemy's head stuck on top of a spear. However, there is little real likelihood of this since the 'Chronicon Dubicense' records *insignia Lithwanorum* as early as 1351, while we know that the Teutonic Knights captured a Grand Ducal standard at the Battle of Rudau in 1370. Both references are probably to flags like 144a, depicting the so-called 'columns of Gediminas' (*Gedimino stulpai*), generally supposed to have been introduced under Grand Duke Gediminas (1315-41), even though it only first actually appears several decades after his death. Representing the gate and towers of a castle (and sometimes more accurately called the 'gates of Gediminas'), this was yellow on a red field, and assumed a variety of forms. 144b is one such, being Jan Dlugosz's representation of one of the 10 carried by Vytautas' troops at Tannenberg.

The other principal Lithuanian flag was the *Vytis*, meaning 'despatch rider' or 'knight', deriving from the verb *vyti*, meaning to pursue or chase. Depicted in 144c, this was red with a gold fringe and bore the device of a silver-embroidered horseman mounted on a black horse and carrying a blue shield charged with a white Lithuanian two-armed cross. (The shield only first appeared in 1388, on the seal of Jogailo, and its introduction is therefore probably connected with the union with Poland in 1386 and Lithuania's resultant

144





nominal conversion to Christianity.) The Vytis took many forms, though by the mid-15th century the rider always rode from right to left so that the shield could be seen. That depicted here is from representations of its appearance at Tannenberg, where it was carried at the head of the third and fifty-first of the Polish divisions, the latter led by Zygmunt Korybut, whose son was later to be regent of Bohemia. Sienkiewicz, in *The Teutonic Knights*, describes the Lithuanian flags present in this battle as 'of different colours, but all alike with the representation of the Lithuanian "chase" ' (a frequent mistranslation of Vytis), but in fact the 30 Vytis banners present there were actually differentiated by the riders' horses being depicted as white, black or piebald, and presumably other colours.

144d and e are the flags of boyars. The white on red axe device of 144d is actually Polish, the Polish nobility 'adopting' 47 of the leading Lithuanian boyar families in 1413 (see page 192) and sharing with them the use of their own heraldry; such a flag as that depicted was in fact carried by Jedrzej of Teczyn's thirty-third Polish division at Tannenberg. 144e is the flag of the princes of Radziwill, depicting a variant of the double-cross device in yellow on a white over green field.

144f and g are the flags of Lithuanian Bielorussia and Lithuanian Wallachia respectively. Colours for these two flags are red on green and yellow on blue. Compare the latter with independent Wallachia's arms, depicted in Appendix 1, numbers v and vi.

145 & 146. TARTARS, 14th-15th CENTURIES

Basic Tartar dress comprised sheepskins — usually black — in winter, and in summer coloured kaftans described by Pero Tafur (writing of the Crim Tartars of Kaffa) as made of 'the delicate silk of those parts, very elaborately worked, like the Moors'. These were short-sleeved and split at the sides. In addition tight or baggy trousers, boots, and an assortment of tall fur, felt and sheepskin hats were worn. This costume is portrayed in many 14th-15th century Western sources; figure 145 is based on a picture in Bertrandon de la Brocquière's 'Voyage d'Outremer' of 1455, but identical figures can be found in, for instance, the Polish 'Legend of St Jadwiga' of c.1353 and the mid-14th century French 'L'Histoire des Rois d'Orient', as well as 14th century editions of Marco Polo. In the latter the kaftan is almost invariably white, the hat white or coloured, and the shirt red or yellow. The kaftan and shirt usually have embroidered borders. Figure 146, on the other hand, wears a distinctly more Asiatic costume, with an outer kaftan that is clearly either quilted or made of leather, possibly as a form of armour. He is a Kalmuk tribesman, from a drawing of c.1438 by Pisanello.

Their principal weapon was the composite bow — much longer than that in use amongst the Turks, Persians and Indians, and firing a heavier arrow to a shorter range — plus a comprehensive armoury of secondary weapons which included sabre, mace, kistien, axe, nahaj and knife. 16th century authorities add that many in addition carried a lance 'like a boar-spear', seemingly of reasonable length, probably about 10 feet. Shields were mostly round, wooden with an iron rim and boss in the case of the larger ones or of osiers covered

in silk, leather or fur in the case of the smaller buckler variety, though usually still with an iron boss. In the late-15th century, following the Ottoman conquest of the Crimea, the Hungarian wing-shield was apparently adopted from the Turks (for which see 92a).

147. TARTAR AGA, 15th CENTURY

No armour was worn by most Tartar tribesmen, its use being generally confined to their chieftains. What there was of it usually took the form of lamellar or mail corselets of Persian or Turkish design and origin, much of it obtained by looting. Indeed, 16th century accounts frequently comment on the fact that Tartar chieftains were dressed and armed like Turks. One notable exception was Tokhtamysh, who reputedly wore armour like that of a 'Western' knight, probably meaning Polish in this instance. The particular figure depicted here wears a short-sleeved mail corselet plus Persian mirror-armour (see 26) and a Turkish chichak helmet with aventail. The fur trim of the latter and the sheepskin jerkin are characteristically Tartar additions, as too is the felt cloak (described by Pero Tafur as 'fine as cloth').

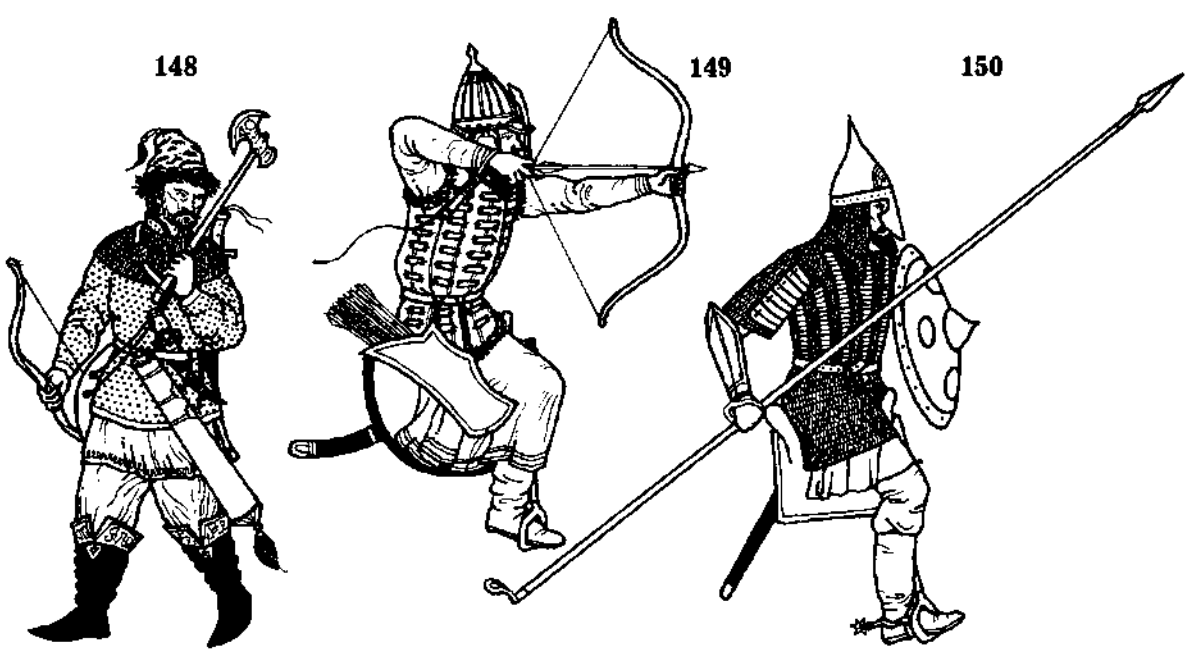
In battle Tartar chieftains were accompanied by standard-bearers. Their standards were still of the traditional Mongol horse-tail variety as depicted in 15b, and on the battlefield they were used for signalling purposes along with pipes and horns.

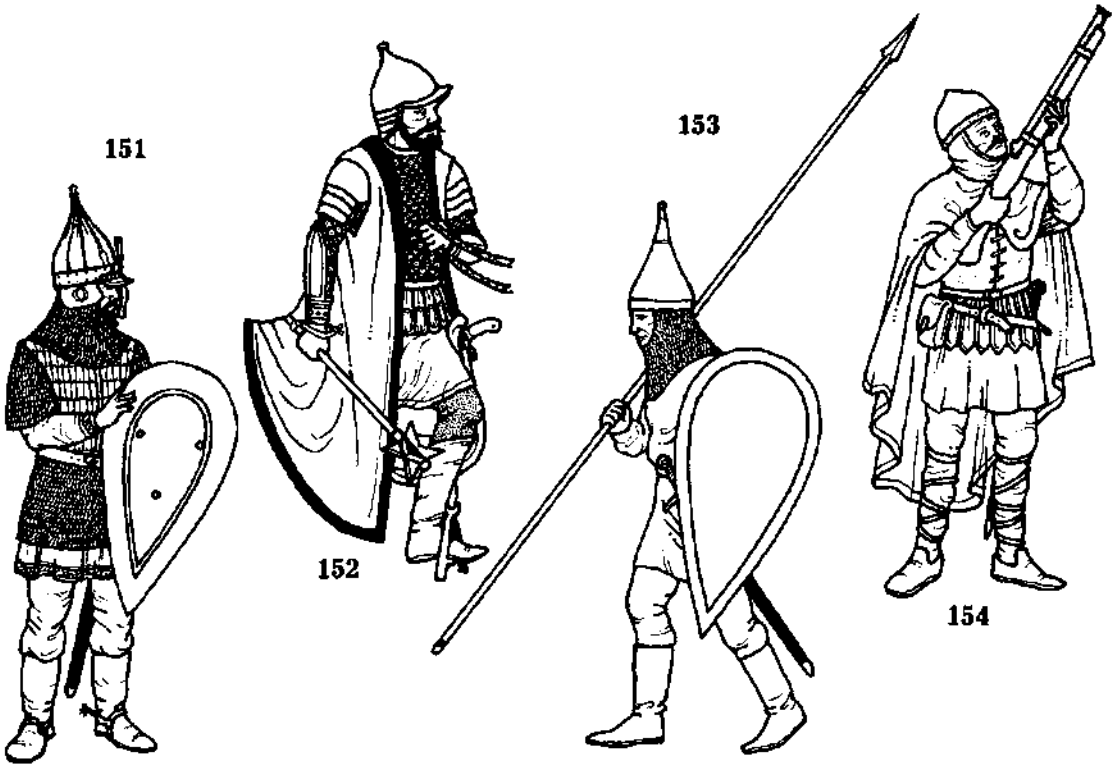
148. TARTAR FOOT-SOLDIER c.1400

Tartar armies were not always comprised exclusively of cavalry. Mamai fielded a large number of infantry (including a Genoese company from Kaffa) at Kulikovo in 1380, as did Tamerlane at Delhi in 1398. The figure depicted here is a composite based on Timurid pictures of c.1400-20. He is armed with bow, axe, dagger and sabre (here behind the left shoulder, though others carry it girded), plus a small shield slung at the hip. Yazdi, a 15th century chronicler, says that Tamerlane's infantry at Delhi were armed in addition with caltrops for use against Mahmud Shah's elephants.

149 & 150. RUSSIAN CAVALRYMEN, 14th CENTURY

The Russians of this period displayed an extreme conservatism in their military equipment, old styles of mail, scale and lamellar armour remaining in widespread use right up to the 16th century. The armour worn by both these figures, however, is of a new type called a *bakhteretz* or *bekhtera*, which first appeared in Russia c.1340 and survived thereafter until the 17th century, by which time it had evolved into an armour of singular sophistication. (For its origins see figure 32.) Figure 149 wears one of the earliest Russian variety, comprised of 3-6 vertical rows of small rectangular plates stitched to the front and back of a sleeveless, padded





linen or rough silk kaftan, which was fastened by hooks down the left side. The later type worn by 150, indistinguishable from those of the Turks and Persians, was a splint-reinforced mail corselet, which had appeared in Russia by c.1400 at the latest. Their helmets are both chichaks, which were characteristic of Russian armour. 150's has a nasal that widens into a face-guard. Note the typical gilt-inlaid panel on the front, depicting a saint or religious scene.

The Russians followed Eastern fashions in their weaponry as well as their armour. Principal arms comprised bow (composite in the south, self in the north-west) and lance. The belt with bowcase and quiver was called a *saadak*; the quiver held about 20 arrows. The lance was of a type adopted from the Mongols, with a wrist-loop and a stirrup-loop, rather like the ceremonial lances still to be seen in use by household cavalry regiments today. Secondary armament consisted of a combination of sword or sabre and axe, mace or kistien, plus often the nahaj and even the lasso (used, for instance, by Muscovite cavalry in the war against Riazan in 1361). Shields came in an assortment of shapes and sizes. They were mostly circular or almond shaped, but Lithuanian pavises appear on West Russian coins throughout the 14th-15th centuries, and heater types also remained in use even in the 15th century, sometimes bouched, conventional bouched rectangular shields also appearing. Towards the end of this period shields were finally abandoned altogether.

Dress comprised a long-sleeved, coloured kaftan, of a sort of rough silk that in itself acted as soft armour. Trousers were either tight or baggy like those of the Tartars. Clothing could be most colours, but with red and red-brown predominant, also green and blue. The boots were usually brown or tan. Both prick and rowel spurs were worn, though many Russians instead favoured riding Mongol-fashion with a small whip that hung from the right hand or wrist.

151 & 152. RUSSIAN CAVALRYMEN, 15th CENTURY

Figures like 151, in old-fashioned Byzantine-style lamellar and mail corselets, continue to appear in Russian mss. and icons right up to the end of the 15th century, even in pictures depicting contemporary events — for instance, a ms. illustration of c.1490 portraying the 4-day confrontation between Khan Ahmed and the Grand Duke Ivan Ivanovich for control of the Ugra fords in 1480 depicts the Muscovites equipped thus. By contrast figure 152, a prince from a mid-century painted icon, has his pteruge-fringed corselet covered with fabric brigandine-fashion, a type of armour which was called a *tegheliay* or *kuyak* (from the Mongol *khatangku dehel* and *khuyagh* respectively; see notes 24 and 25). In addition he wears European-style plate pauldrons and Turkish-style vambraces, a graphic testimony of the conflicting influences of East and West

to be found at work in Russia by this late date. His sleeveless cloak, though often worn on the battlefield by princes, would not have been worn in actual combat.

153 & 154. RUSSIAN FOOT-SOLDIERS, 15th CENTURY

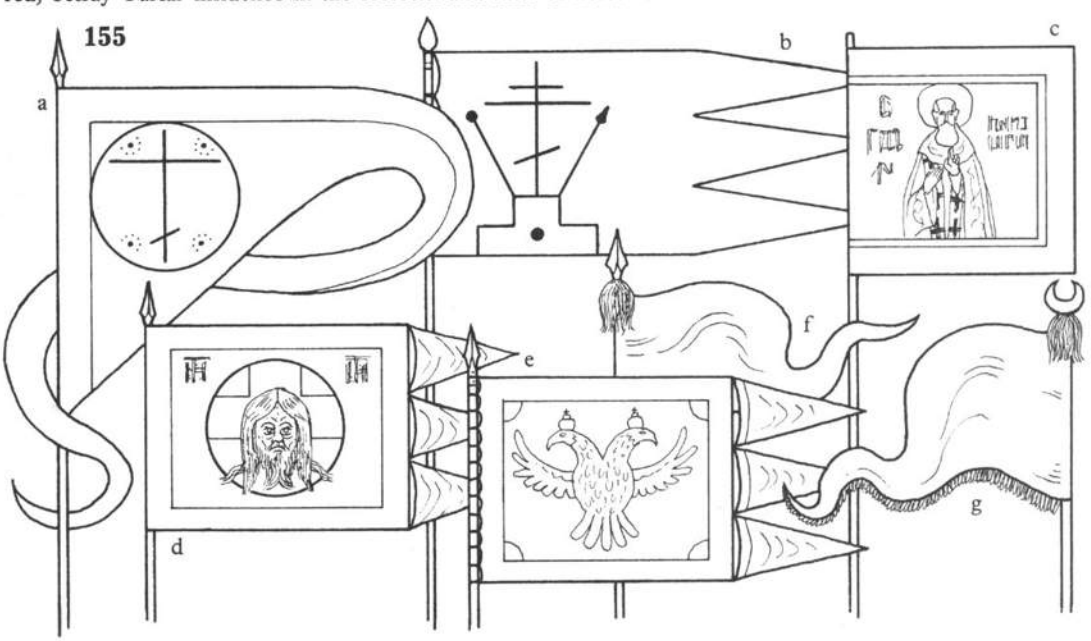
Figure 153 is typical of the infantry to be found in Russian illustrations throughout the 14th and 15th centuries, where they are invariably depicted armed with either a spear and shield or a bow, Russian infantry traditionally including large numbers of archers who were fielded in separate units from the spearmen. Many of the Russian infantry serving in Lithuanian armies were archers. Fabric, mail or lamellar/scale armour would have been worn at least by those elements of the infantry raised by the town militias, though rural levies were less well-equipped. Shields could be any one of the several varieties mentioned under figures 149 and 150.

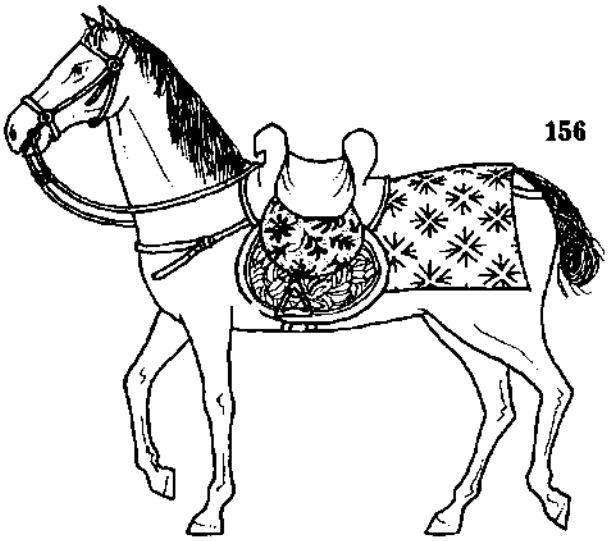
Handguns appeared in Russia at some indeterminate time in the 15th century, the date being confused by the imprecise terminology applied by contemporaries. Certainly the words *tiufiak* (borrowed from the Ottoman Turkish *tufek*) and *pischal* (from the Bohemian *píšťala*) had appeared by the late-14th and early-15th centuries respectively, but they are usually interpreted by modern authorities as being references to light cannons. The earliest indisputable record of Russian troops using handguns dates only to 1480, when the 'Vologda-Perm Chronicle' mentions them amongst the equipment of the Muscovite troops facing Khan Ahmed on the Ugra River. Figure 154 comes from a slightly later ms.; under his cloak he wears leather armour laced up the front, including a skirt of pteruges that was put on separately like a belt. The ms. illustration mentioned above of the Ugra fords encounter actually shows one man firing a handgun from horseback.

155. RUSSIAN FLAGS

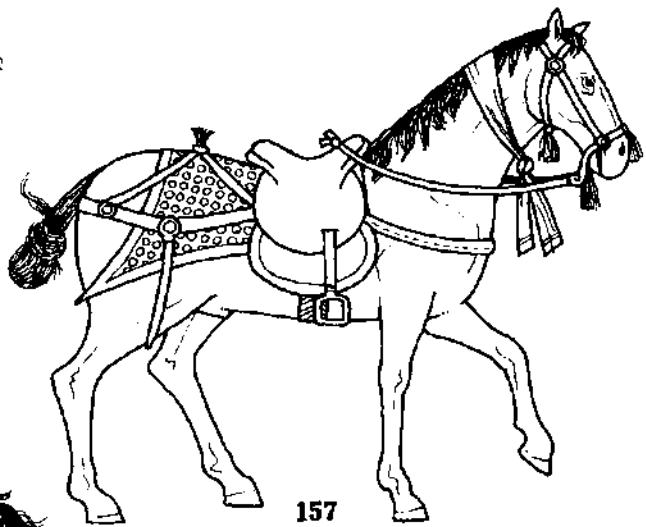
It is clear from contemporary sources that Russian flags were almost invariably of a religious nature, generally depicting a cross, Christ, a saint, or the Virgin Mary. Examples of most of these can be seen in the selection depicted in 155a-d (all of which date to the 15th century, with the single exception of 155c). Principal background colour was red, although occasionally yellow or green were used, and the image was most often embroidered or painted in gold, white and black, sometimes within a white panel reversed out of the field. The 'Tale of the Bloody Battle with Mamai' describes Dmitri Donskoi's banner as black, though 16th century ms. illuminations depict it in both red and green.

155e is the flag of Tsar Ivan III, who adopted the Byzantine double-headed eagle, in white on red (with white/red/white tails), following his marriage to the last Emperor's niece in 1472. 155f and g, which are plain red, betray Tartar influence in the crescent and tufts of horse-hair.

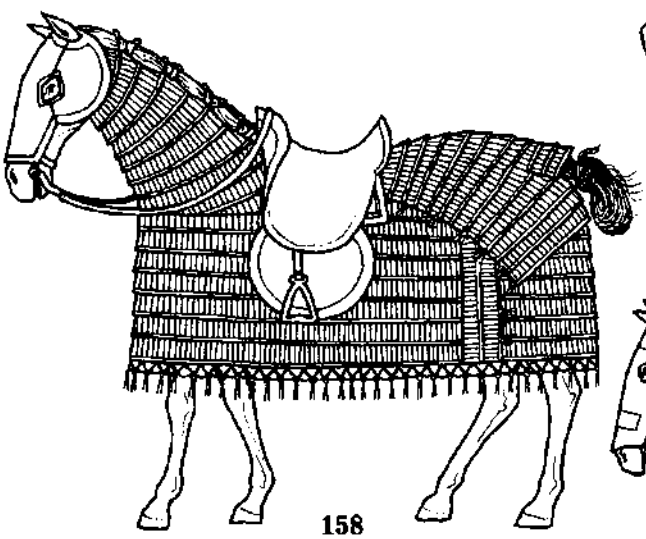




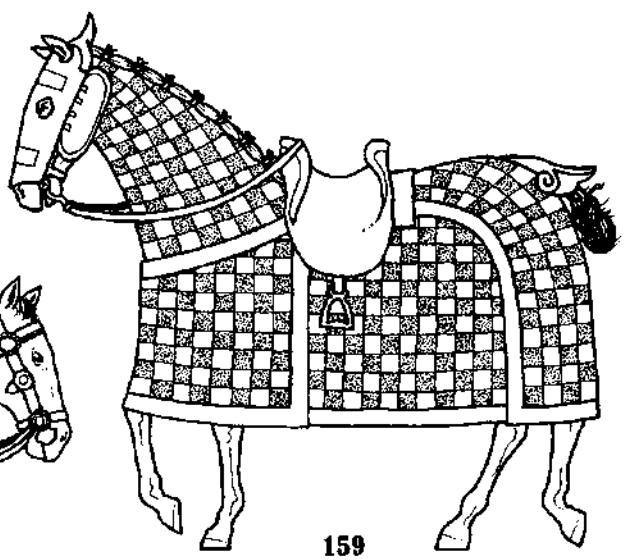
156



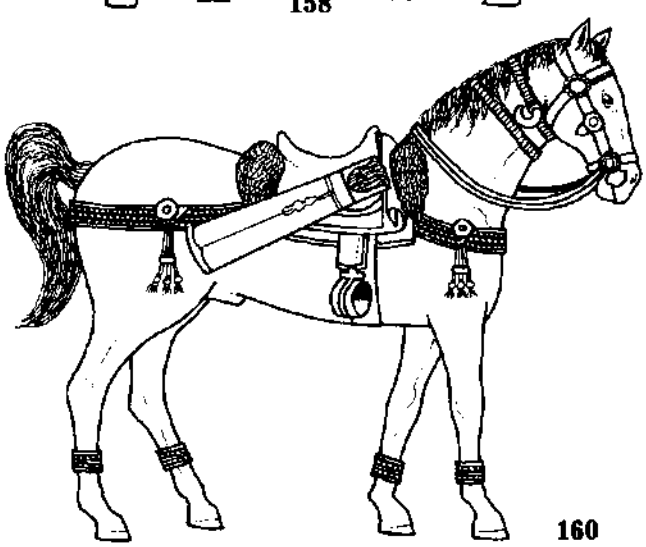
157



158



159



160

156. OTTOMAN HORSE

It is clear from contemporary accounts that these were slight in build and smaller than the horses of Europe, Syria or Persia. Pero Tafur described them as 'very small and lank', and regarding their build commented that 'it seems at times as if they could scarcely carry their masters.' Bertrandon de la Brocquière, however, noted that though they were lighter, Ottoman horses cost less in food, galloped better, and skirmished longer without losing their wind, than did Western horses. Chalkokondyles, describing the Battle of Kossovo in 1389, specifically stated that the Ottoman horses were faster than those of their Serbian adversaries.

Further details provided by Brocquière tell us that only horses which could walk fast and gallop for a long time were used, and that nearly all were geldings. (He adds: 'They keep some others for stallions, but so few that I have never seen a single one.') Regarding their harness, he observed that 'they saddle and bridle them *à la jinete*. Their saddles are commonly very rich, but hollow, having pommels before and behind, with short stirrup leathers and wide stirrups.' The Turks sat in their saddles 'as in an armchair, deep sunk in them, their knees very high, and with short stirrups, a position in which they cannot support the smallest blow from a lance without being unhorsed.'

Those of officers had throat-plumes, silk and woollen decorations, highly ornate saddles and saddle-cloths, and decorated harness.

157. MAMLUK HORSE

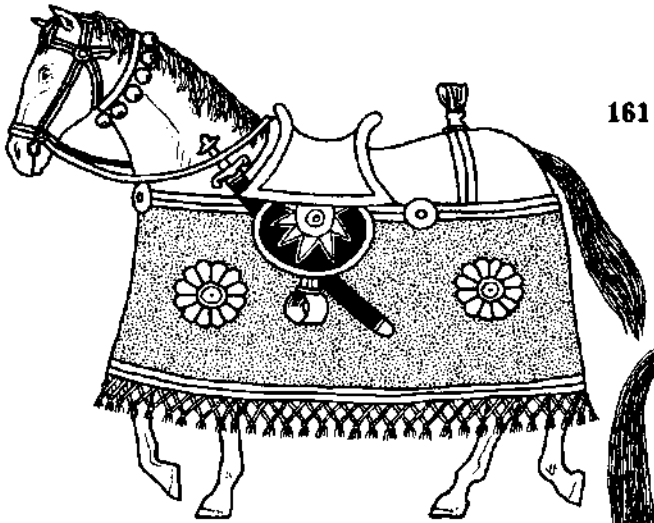
In 1422 Gilbert de Lannoy recorded that on average each mamluk had 2 horses, while in 1498 Arnold von Harff wrote that each 'must have 3 horses'. That depicted here, from a Furusiyya ms. of 1366, is probably a Barb or Barb cross, Barbs being the native horses of North Africa; certainly the Mamluks imported many horses from Libya and other parts of North Africa, as well as Arab thoroughbreds. The ms. depicts horses in all colours, with the tail usually (but not always) tied. The size and shape of the saddle-cloth, richly embroidered with floral and other coloured patterns, is typical. Note also the short stirrups and curb bit. In battle many Mamluk horses were armoured in chanfrons and steel bards called *barkustuwanat* like those described under figures 158 and 159. Armoured horses were also ridden for the furusiyya lance-games.

Superlative horsemen though the Mamluks were, it is interesting to note the opinion of several contemporary Mamluk authorities that, as a result of their preoccupation with furusiyya exercises, many were unable to make simultaneous use of their hands and legs, citing in particular the problem of changing direction at the gallop, where it proved necessary for them to actually stop the horse first!

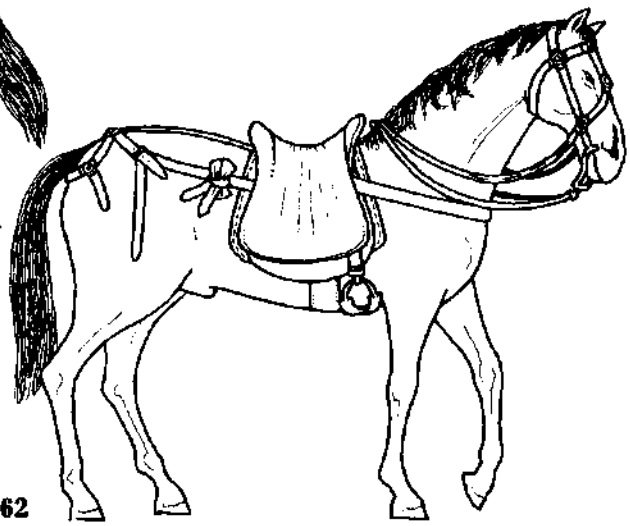
158 & 159. PERSIAN ARMOURED HORSES

Although horse-armour had been known in Persia since ancient times, it does not seem to feature in illustrations of this period before c.1340. Thereafter, however, it appears with increasing regularity until, early in the 15th century, some 50% of all Persian cavalry depicted in contemporary mss. ride barded horses, though in some sources they are restricted to the leaders. These horse-armours were of several different forms of construction, predominantly lamellar or scale, also chequered fabric, but apparently never mail (except occasionally in India). The lamellae were usually either iron or lacquered leather, and one source mentions copper. Josafa Barbaro describes horse-armour amongst Uzun Hasan's army in 1474 thus: of 20,000 'horses of service . . . there were 2,000 covered with certain armour of iron, made in little squares and wrought with gold and silver, tacked together with small mail, which hung down in such manner to the ground, and under the gold [edge?] it had a fringe. The rest were [also] covered, some with leather after our [ie, the Italian] manner, some with silk and some with quilted work so thick that an arrow could not have passed through it.'

Persian horse-armours comprised a chanfron, neck-piece, peytral, large flanchards and a broad crupper. Only the horse's nose, ears and lower legs were usually visible, though some mss. show the bard reaching down only as far as the horse's belly and chest, thus leaving the legs entirely exposed. In addition the neck-piece was tied at the back but often left the throat exposed, while the bard itself was sometimes split at the front and sometimes not. The various constituents of the armour can be clearly seen in the two figures included here. 158 dates to c.1440-45, though identical armour appears in other pictures dating back to at least c.1375. The armour portrayed comprises steel lamellae or laminae with gilt bands running between the rows, plus an iron chanfron and a red ribbon binding the neck-piece along the back of the neck; the saddle is tan with inlay, the saddle-flap red with gold decoration, and the cloth blue. Frequently, if not usually, such laminated or lamellar armour was painted, either uniformly or with alternate rows in a different colour. Borders too might be in a different colour. Such painted armours could be virtually any colour — for example, a single



161



162

miniature depicting a battle between Tamerlane and the sultan of Delhi in 1398 shows 5 lamellar bards, one each of which is coloured magenta, orange, red, blue and dark green. The iron chanfron, however, was normally left unpainted.

Chequered fabric armour (described as 'quilted silk' in most sources), such as that of 159, appears in a considerable number of pictures throughout much of this period. That depicted here dates to c.1420. It was most often red and white, but occasionally appears in other colour combinations such as blue and white, blue and yellow or dark green and light green. Both Barbaro and Caterino Zeno regarded such quilted armours as arrow-proof.

Although these pictures are both of Persian provenance, it is clear that such horse-armour was in widespread use throughout the Moslem world. Indeed, many such armours described as 'Persian' or 'Turkish' to be found in museums round the world are now believed to be of Mamluk origin, which confirms that all three were basically indistinguishable. Tamerlane's troops are described as mounted on horses wearing 'iron armour' like that of 158 at Kondurcha in 1391, and it is this same type of armour that is intended by the Ottoman term *gugal* or *cugal*, to which Janus Lascaris is doubtless referring when he mentions that 'a small number' of the Ottoman household cavalry rode barded horses. A similar small number of the feudal sipahis fielded by subashis and sancakbeys (about one in every 50 or 60) were required to ride armoured horses. In Moslem India such armour was in widespread use, still appearing in Indian art virtually unchanged as late as the 18th century.

160 & 161. INDIAN HORSES

Figure 160, a Hindu cavalryman's horse complete with characteristic loop stirrups, is from a mid-13th century sculpture at Kanarak in Orissa. The Hindus had access to far fewer horses than did the Moslem kingdoms, not least because horses do not breed well in southern India; this led to Moslem rulers being called *asvapatis* (lords of the horse), and the Hindu rulers of southern India *narapatis* (lords of the footmen). Most Hindu horses had to be imported from the north of the sub-continent at considerable expense, and as a result they were highly prized. Fernão Nuniz records that the king of Vijayanagar had 1,600 grooms and 300 horse-trainers to attend to the welfare of the horses in his own stables; he adds that those of the king's guardsmen were branded for identification, and before any of them that had died could be replaced the branded part of its hide had first to be handed in. By this date (the 1520s) 13,000 horses were bought in from Persia alone every year.

The Moslems too bought in most of their own horses, chiefly from Tartary, Persia, Turkestan and the high

lands beyond the Hindu Kush and the Himalayas. Al-'Umari tells us that some also came from Arabia, the rest being 'of Turki and Rumi breed'. Of them all the Tartar horses were deemed best, costing up to 8 times as much as the lowest grade of war-horse. Some native horses were also used: Barbosa records that 'there are some very good horses in the kingdom of Delhi, which are born and bred there.' Like the Hindus, the Moslems too used branding (*dag*) as a means of identification, this being introduced under Alauddin Khilji (1296-1315). The practice declined considerably under Firuz Shah Tughluq (1351-88), but along with the *huliya* (now called a *chehra*) was revived at the very end of this era under Sikandar Shah Lodi (1489-1517). Moslem Indian armies were normally accompanied by herds of spare horses, which were often distributed to the army at the sultan's own expense. Some Moslem soldiers anyway, those called *do-aspah*, had their horses provided by the state.

As mentioned above Moslem Indian horses wore horse-armour like that of 158 and 159 — Athanasius Nikitin, for instance, refers to Bhamani cavalry as 'mounted in full armour, man as well as horse'. However, Hindu cavalry horses could also be barded. Domingos Paes, in a description of a military review in Vijayanagar of c.1520-22, says the horses were 'fully-caparisoned, and on their foreheads chanfrons, some of silver but most of them gilded, with fringes of twisted silk of all colours, and reins of the same; others had trappings of Mecca velvet, which is velvet of many colours with fringes and ornaments; others had them of other silks such as satins and damask, and others of brocade from China and Persia.' It is probably such horse-armour that is depicted in figure 161, from a Hindu painting of 1447 from Gujarat.

162. BYZANTINE HORSE

Pisanello's drawings of the Emperor, made during his visit to Rome in 1438, include detailed studies of Byzantine horses, on which this figure is based. As can be clearly seen, the harness was very Eastern in style by this date, with short stirrups of Asiatic design and a shallow saddle well-suited to the Turkish style of fighting which the Byzantines had by now adopted (see notes to figure 55). One other interesting detail is found in the horse's slit nostrils, a Turkish practice designed to enable horses to breathe more freely 'in the severe and long-continued exertion of their speed'; the practice remained prevalent in some countries right up to the present century, being recorded in Turkestan as late as 1926.

In the 14th century at least the older style of harness with longer stirrups described in *Armies and Enemies of the Crusades* still persisted, though the horses were now almost certainly exclusively Turkish and Thessalian in origin. The value placed on some Turkish horses is apparent from an anecdote in Sphrantzes' chronicle, where he relates how the 'excellent horse' killed under him before Patras had originally been presented by Sultan Murad II to Isaac Asan, a high-ranking Greco-Bulgarian nobleman.

Horse-armour may also still have been in limited use in the 14th century, lamellar bards of a similar type to that depicted in *Armies of the Dark Ages* (figure 144) being worn by the Emperor's horse and that of one of his aides in a scene of the mid-14th century 'Romance of Alexander the Great' ms. mentioned under figure 51 above. However, it should be noted that only these two horses are shown armoured in the entire ms., compared to hundreds unarmoured.

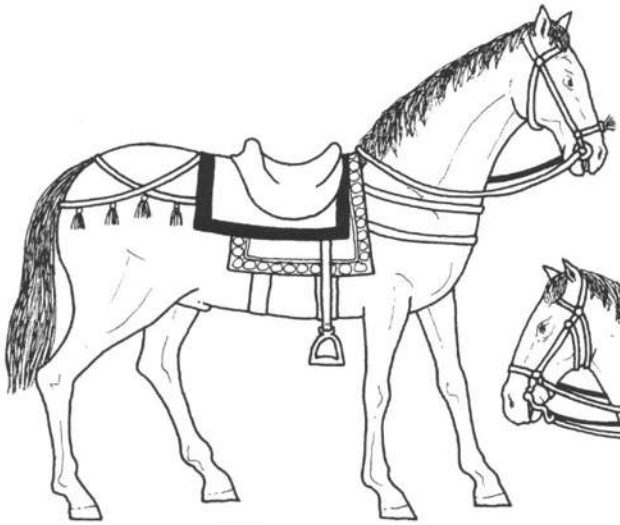
163. RUSSIAN OR LITHUANIAN HORSE

Though from a ms. of c.1350 depicting a cavalry engagement between the armies of Novgorod and Suzdal, this horse could equally well be Lithuanian, Moldavian, Wallachian, or even Tartar, since other sources seem to indicate that the type of harness they all used differed very little. All rode in a low saddle which permitted twisting easily from side to side, with short stirrups and a light bridle, and their horses were generally of no great size, being smaller than those employed in Western Europe. Very few at first wore spurs (see notes 78 and 149-150), controlling the horse instead with the knees and, in the case of the Russians and Tartars at least, a small whip suspended from the wrist. Reins were held on the little finger of the left hand when a bow was being used.

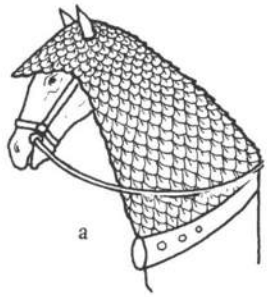
Except for the Tartars, horse-armour was virtually unused by all of these peoples, though 163a shows a rather unusual scale hood that is depicted being worn by a 14th century Lithuanian horse. Russians, Tartars and Lithuanians alike largely rode unshod geldings, the Lithuanians favouring skewbalds and roans.

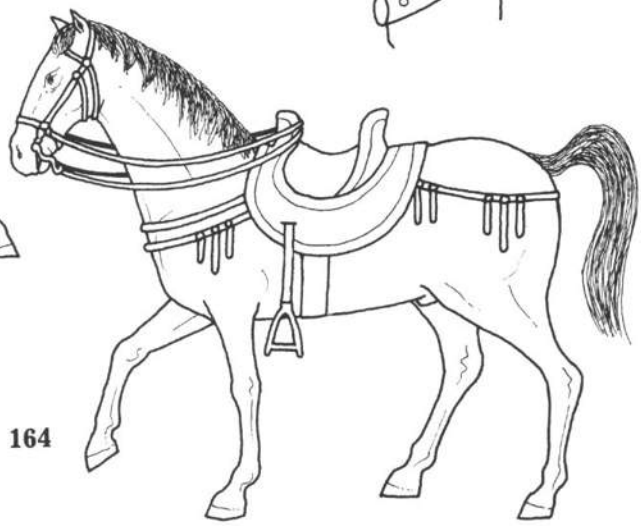
164. BALKAN HORSE

In addition to the last figure, other Wallachian and Moldavian horses would have resembled this figure, a Bulgarian mount from the 'Chronicle of Manasses'. Albanian, Serbian and even Hungarian horses were



163





164

similar, Brocquière actually describing Hungarians riding in a tournament as having 'small horses and low saddles'. Horse colours favoured in the Balkans in the early part of this period were grey, black, strawberry roan, piebald and white. The Ottomans appear to have been responsible for the introduction of greater numbers of chestnuts and sorrels, along with the *bakraclija*, a type of stirrup with a sharp edge that doubled as a spur. Tails were sometimes tied, at least in Bulgaria and Serbia.

Frankish Greek, Cypriot, German and Polish harness was identical to those described under figures 138-143 in volume 1, though it seems likely that horse-armour would have been less commonplace among the cavalry of the Venetian- and Genoese-held islands of the Aegean.

165 & 166. INDIAN WAR-ELEPHANTS

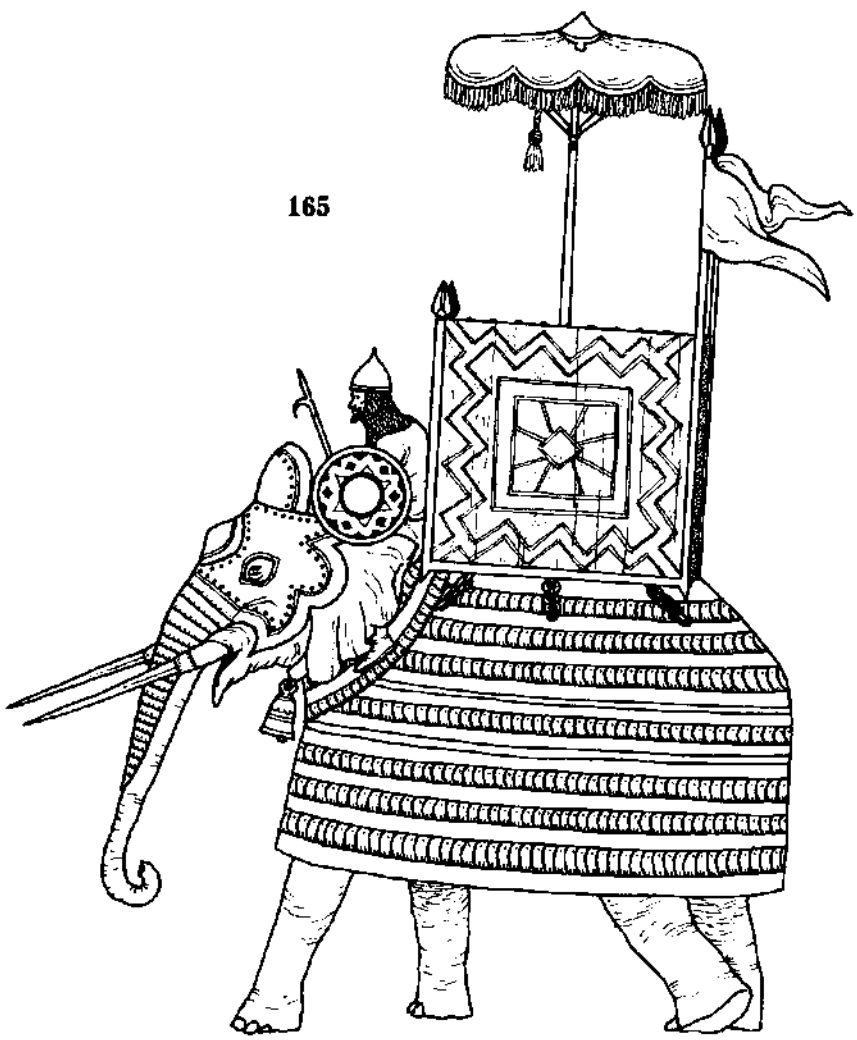
India's war-elephants tended to excite considerable interest not only amongst Western visitors but amongst Moslem travellers too, and even amongst the country's resident historians and chroniclers. As a result we are well-provided with contemporary descriptions, which are remarkably consistent in their fundamental details. They invariably tell us that (a) these elephants were armoured, and (b) they were mostly fitted with howdahs. The latter were invariably wooden, box-like structures, described as 'turrets' or 'castles' by Western observers, which were nailed to a broad platform, secured by chains and sometimes reinforced with steel. Clavijo adds that they carried banners (see below) and other sources mention a canopy, presumably meaning an umbrella as depicted in 165. Armour appears to have been thorough; several descriptions use such phrases as 'clad in steel armour', 'covered with armour' or 'clad in decorated plates of steel', from which it seems clear that a lamellar bard is intended (which al-'Umari calls a *barkustuvan*, ie, the same name that the Mamluks applied to horse-armour). One other feature of elephant armour in this period was the practice of fitting heavy swords to the beasts' tusks, and seemingly on occasion to their trunks too. Clavijo described how 'they attach a large iron ring to each tusk and fasten swords upon them, like the grooved swords we use in war, but theirs are shorter being only as long as a man's arm'; Athanasius Nikitin, who visited India in 1468-74, mentions both 'large scythes' and 'large iron weights' being attached to the trunk for use in battle.

The size of the howdah crew in this period varies considerably in the sources from 3 men right up to 16. Portuguese accounts of the early-16th century all agree on 3 or 4 men in the howdah, and Nikitin also mentions 4 in several places, though elsewhere he claims that the larger elephants could carry 12 men and

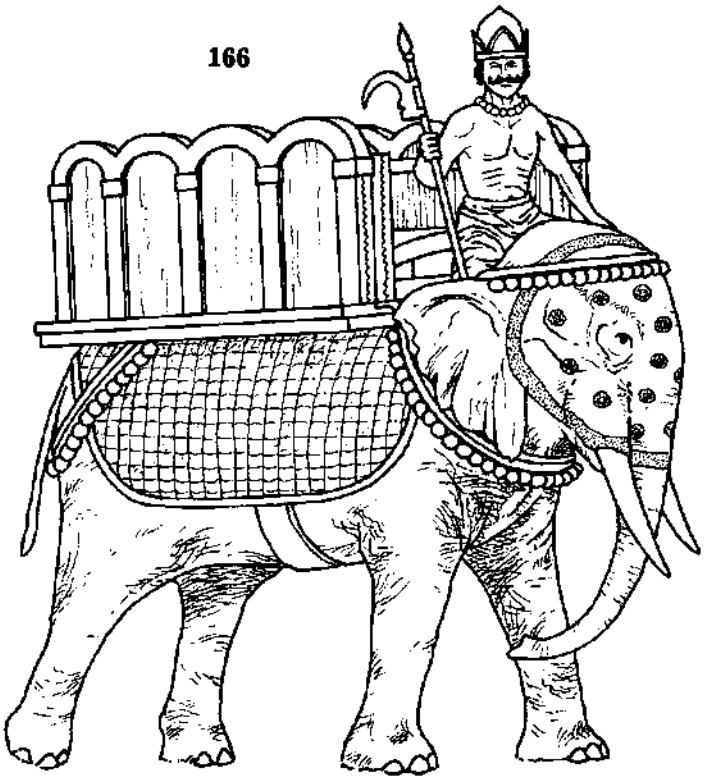
the smaller 6. Al-'Umari similarly claims they could carry 6-10 men 'according to the strength of the elephant', but Clavijo says only 5 or 6 men plus the mahout. On the whole it seems likely that most crews numbered no more than 3 or 4 men plus mahout, with the strongest elephants perhaps carrying a howdah crew of 6. Those of the Hindus were armed with bows, javelins, quoits and shields, while Moslem crews were principally archers and grenade-throwers or rocket-throwers (*ra'd-andazan* or *takhsh-andazan*), with many handgunners too appearing among them by the 1460s. They were normally armoured, as too was the mahout (but see figures 37 and 166).

Contemporary pictures of war-elephants are, alas, thin on the ground, and figure 165 is a composite based on a Hindu ms. of c.1475 (the howdah, flags and canopy) and a 12th century painted box (the body-armour), plus a Moghul ms. of the mid-16th century (the chanfron). Similar howdahs are to be found depicted in 12th-15th century Persian mss., painted bowls and the like, but the armour is the only representation of its kind that I have found. In the original it is grey, doubtless to indicate iron or possibly steel, and the elephant is shown as one of a pair pulling a chariot. Its head is unarmoured, but at the very beginning of the 16th century (1504) a European traveller emphasised that the head and trunk were 'especially' armoured; the Moghul chanfron depicted is therefore probably little, if at all, different from those that would have been used in the 14th-15th centuries. Several written sources testify that elephant-armour was decorated (gilded or inlaid), and it appears to have been sometimes draped in rich 'scarlet and silken cloths', or fringed gold or velvet cloth in many colours.

165



166



As we have already seen, the flags on the howdah are confirmed by Clavijo, who reported that the elephants he saw at Tamerlane's court carried 'a small wooden castle with 2 standards'; in another place he describes the howdah as 'covered with silk, with 4 yellow and green banners at the corners'. Shihab al-Din al-'Umari also mentions 'covered', or 'curtained', howdahs. He describes the howdahs themselves as having 'apertures and windows . . . for shooting arrows and throwing naptha grenades through', which implies they were taller and larger than that depicted here; however, one Persian stucco relief panel of the late-12th century shows a howdah with a close-set ornamental balustrade round its upper portion, and it may be a similar arrangement to which al-'Umari alludes.

Not all war-elephants actually carried howdahs — of those he saw in 1398 Tamerlane wrote only that 'most of them' had howdahs, and many 14th-15th century Hindu sculptures to be found in South India depict elephants in battle-scenes without them. Even the 16th century Portuguese accounts do not always mention howdahs being used in Vijayanagar — Domingos Paes, for instance, says of the elephants he saw that 'on the back of each one of them are 3 or 4 men (ie, the mahout and 2-3 others), dressed in quilted tunics, and armed with shields and javelins'; no howdah is mentioned. In addition 16th century Moghul and Persian mss. almost invariably depict war-elephants without howdahs, their crews (almost without exception comprising only the mahout and one other armoured man) sitting astride them, secured with ropes and straps. The conclusion one arrives at by comparing the written and pictorial sources is that whereas Moslem Indian armies preferred their elephants with howdahs, the Hindus probably reserved them for kings, nobles and commanders.

166 depicts a variant type of howdah, a sort of 3-sided wooden throne open at the front and often rounded at the back, called a *caudolu* in Telugu. This particular example is from an ivory of 14th-15th century date made in Gujarat, on which the elephant is shown amidst a cavalry melee. Though from a Moslem kingdom (Gujarat had seceded from the Delhi sultanate under Zafar Khan in 1396), the artist — like most of the kingdom's army — was clearly a Hindu, and he seems to have conscientiously depicted a Hindu, rather than a Moslem, war-elephant. It appears to be virtually unarmoured like those depicted in Vijayanagar sculpture, though the quilted back-covering is probably of leather. Its face would probably have been painted pink, with a red outline and spots, since the majority of 15th century Hindu pictures portray elephants decorated thus. Various written sources also confirm the practice of painting elephants. Paes, for instance, refers to those of the king of Vijayanagar with 'faces of giants and other kinds of great beasts' painted on their heads, while Clavijo refers to Tamerlane's (captured from the sultan of Delhi) as having 'their hides painted with green and red and other colours'.

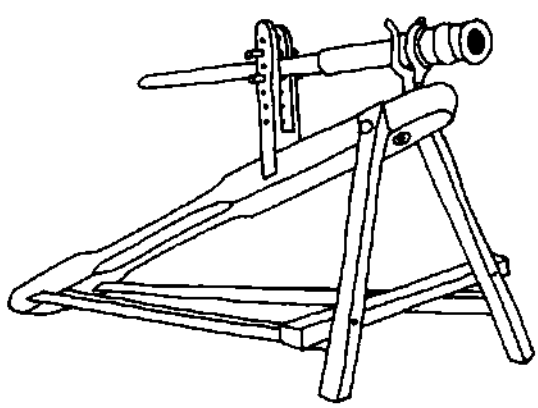
ARTILLERY

The evolution and early development of gunpowder artillery has already been covered in some detail in *Armies of the Middle Ages, volume 1* and it is not intended that it should be repeated here. Instead, this section comprises just a few illustrations and captions describing certain types of gun more relevant, though not necessarily unique, to the area covered in this volume.

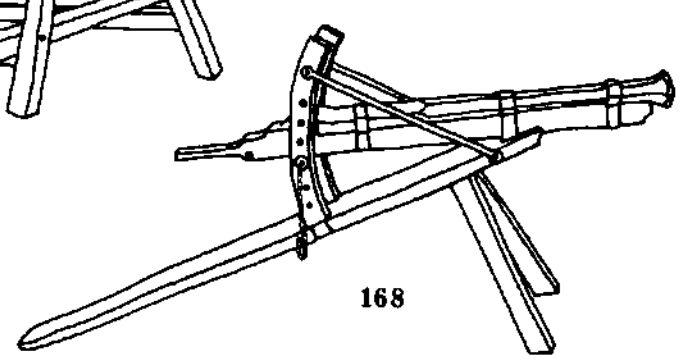
167 & 168. These are Hussite tarasnices, or 'palisade guns', which were light pieces mounted on wooden trestles. They were usually constructed of welded iron but were sometimes cast in bronze. The Hussites also used them as field-guns on wheeled carriages by 1430, when one such is mentioned in an inventory of Tocnik castle. The Germans were quick to copy this type of gun, calling it a *Tarasbüchse* or *Bockbüchse* ('trestle-gun'), Nuremberg actually sending along 12 in its artillery train for the anti-Hussite crusade of 1427. Of the two examples depicted here, 167 is a surviving Hussite piece of c.1420-30, while 168 is another surviving example, of similar date but German origin. The latter has a barrel 4 feet 9 inches long and a calibre of 1.8 inches.

169. It seems likely that the wheeled tarasnices mentioned above would have resembled this light piece. Taken from an edition of the 'Grandes Chroniques de France', this is in fact the earliest known portrayal of a wheeled gun-carriage, dating to c.1390-1410. As was mentioned in volume 1, wheeled guns had appeared during the 14th century (Nuremberg, for instance, had 2 light, wheeled guns in 1388 capable of firing 50 shots a day), but it was not until the Hussite wars that they became popular. Bohemian and German sources of the 1420s and 1430s make frequent reference to '2 wheels to the gun' and 'firing wagons [*Schisswagen*] for guns'.

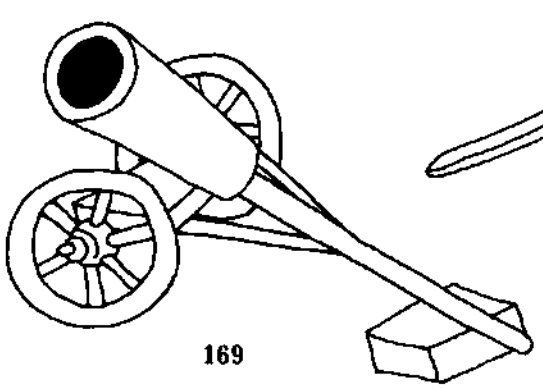
170. Another inevitable result of Hussite influence on the development of artillery — and in particular of the almost universal adoption of the battlefield wagon-fortress throughout Eastern Europe and the Near East



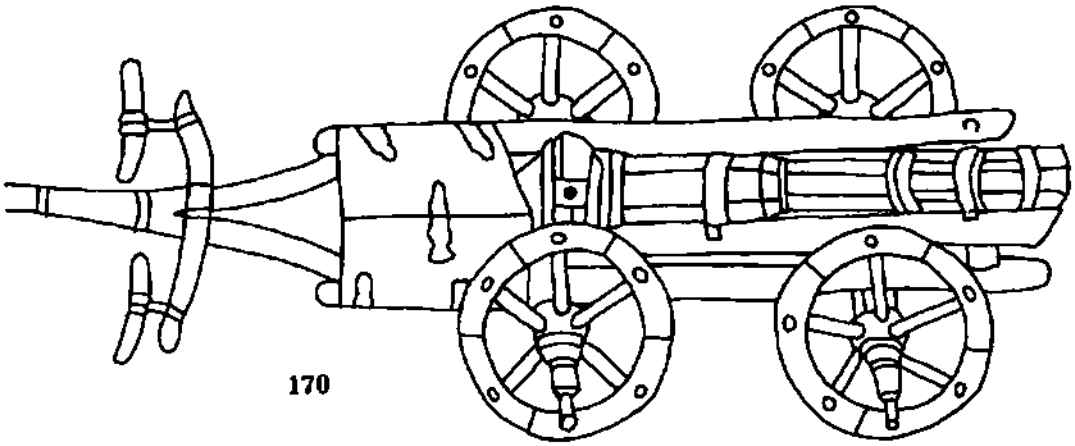
167



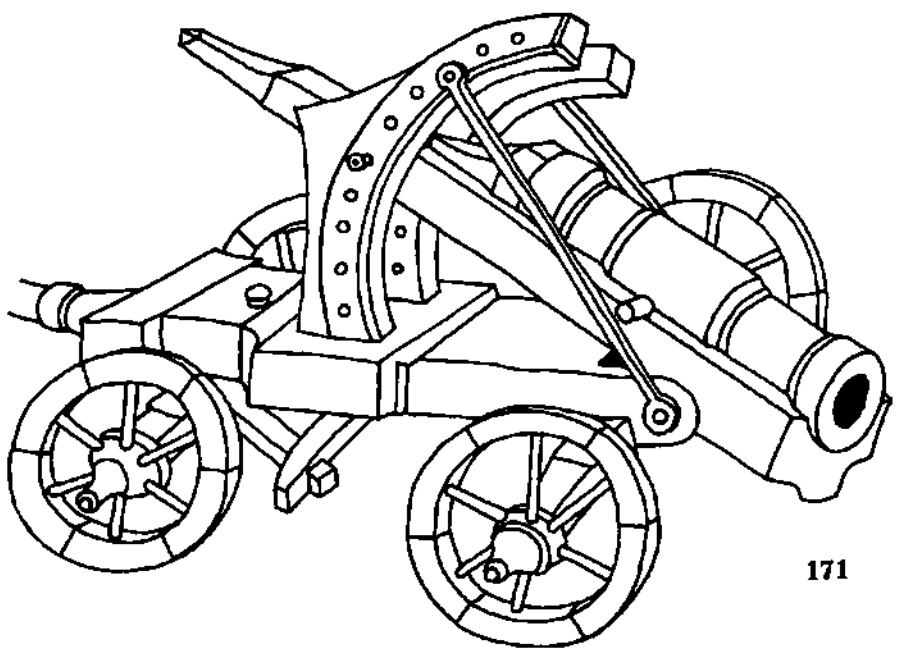
168



169



170



171

— was the evolution of the *Wagenbüchse*, or 'wagon-gun', of which this particular example comes from the German 'Firework Book' of c.1440-50 in the British Museum. Note that the wagon includes an ammunition locker. Other contemporary illustrations depict more complex carriages that incorporate trunnions and elevating devices.

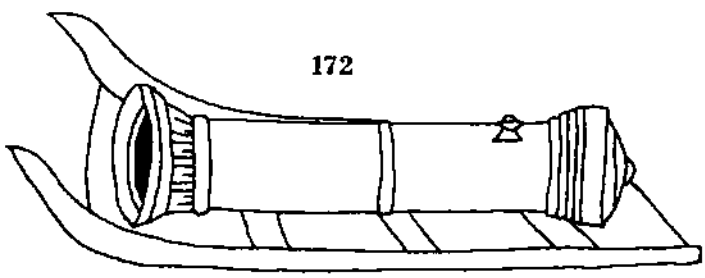
171. This gun, from another German ms. dating to c.1460, displays considerable development of the gun-carriage, including the addition of a separate, detachable limber. Almost identical carriages remained in use even in the 16th century, being found, for example, in a Dürer etching dated 1518.

172. This sled-mounted Russian siege-gun of 1428 comes from an early-16th century ms. wherein sleds outnumber wheeled gun-carriages. The 'Livonian Rhymed Chronicle' indicates that such sleds were employed as baggage transports by the Teutonic Knights and Lithuanians too in the late-13th century, so in the 14th-15th centuries were doubtless similarly used to transport artillery during the winter months.

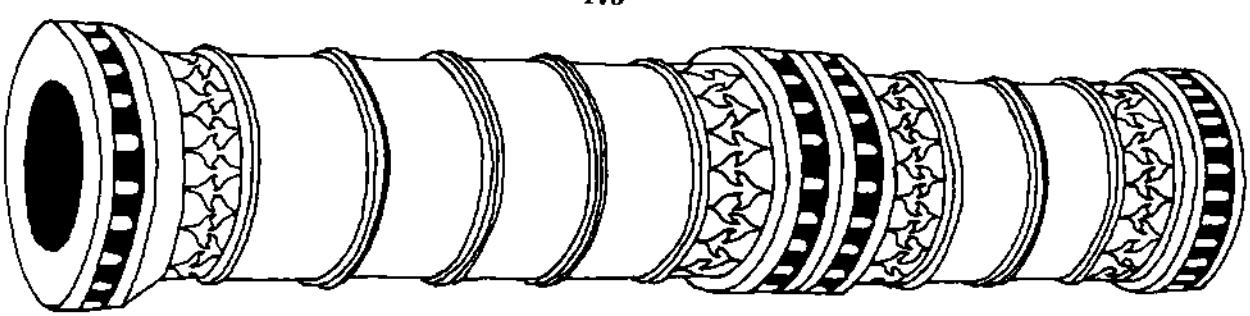
173. Typical of 15th century Ottoman cannons is this piece, the 'Dardanelles Gun' presented to Queen Victoria in 1866. Cast in 1464, it is made in 2 halves screwed together, each weighing between 8 and 9 tons. It measures 17 feet 2 inches overall, with a bore of 25 inches in the muzzle half (the stone shot it fired being just over 24 inches in diameter and weighing 672 lbs) and a bore of 9¾ inches in the breech half to accommodate the massive powder charge. The 2 halves measure 10 feet 4 inches and 6 feet 10 inches respectively, and stand 3 feet 6 inches tall. In action such pieces were supported in a cradle or framework of wood braced on all sides to absorb the powerful recoil; examples of such frameworks can be seen in volume 1, figures 147 and 148.

174. This is one of 3 Mamluk guns of al-Ashraf Qaytbay's reign (1468-95) preserved at the Turkiye Askeri museum in Istanbul, which were undoubtedly amongst those captured in the Ottoman invasion of 1516-17. Taghribirdi observed such a gun being tested in 1464. He described the gun itself as some 14 feet 4½ inches in length, with a muzzle circumference of 9 feet 4½ inches and weighing 170 Egyptian *qantars* (16,830 lbs). It took a powder charge of 37 Egyptian *ratls* (36½ lbs) and in the tests fired stone shot weighing 4 qantars (396 lbs) from a high wall to a distance of 3,850 yards, one shot actually travelling some 4,700 yards. It should be noted, incidentally, that at least until the early-15th century some Mamluk guns, like their European counterparts, fired quarrels as well as shot; Qalqashandi describes guns which 'in part . . . shoot big arrows which almost pierce a stone and in part they shoot balls of iron weighing from 10 to over 100 Egyptian ratls.'

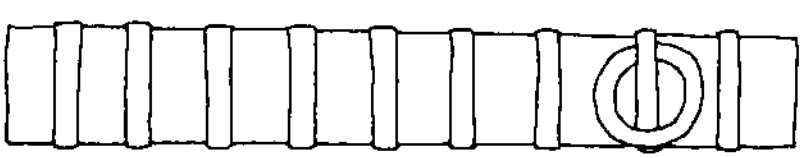
172



173



174



APPENDICES

APPENDIX 1 HERALDRY

Heraldic terminology has been used in most cases to describe the coats-of-arms depicted, but study of the drawings and cross-reference to Appendix 1 in *Armies of Feudal Europe* and Appendix 2 in *Armies of the Middle Ages, volume 1* should help to clarify the meaning of any particular expression with which you may be unfamiliar. Tinctures are abbreviated throughout as follows: or = gold/yellow; arg (argent) = silver/white; gu (gules) = red; az (azure) = blue; vert = green; purp (purpure) = purple; sa (sable) = black.

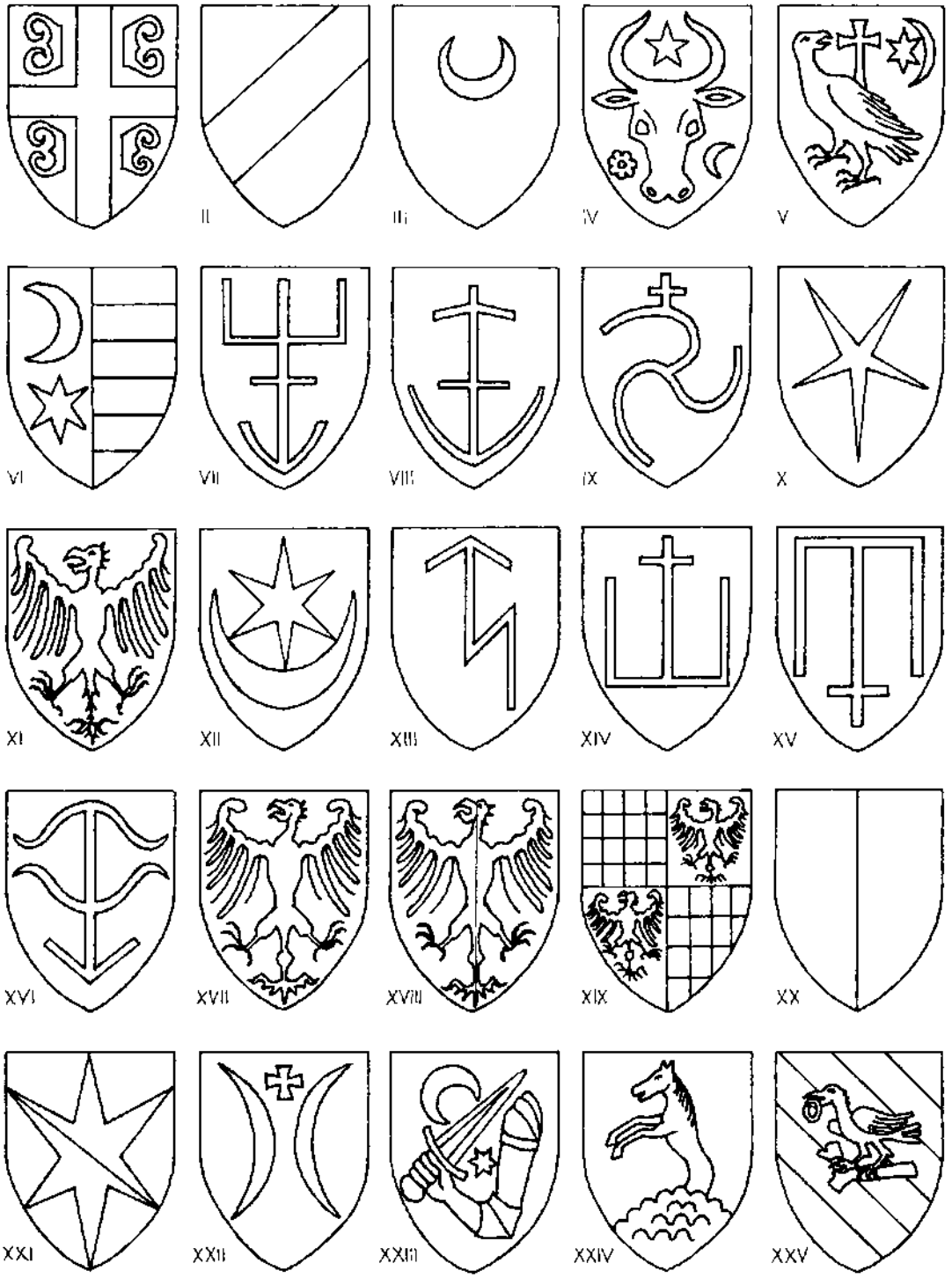
The Balkans

Although some South Slavs had adopted arms by the 13th century, heraldry only began to appear in Serbia — and only on a very modest scale — late in the 14th century, the lion of Vuk Brankovic of Skopje (dating to 1388) seemingly being the first instance. The word for a coat-of-arms, *szamenie*, only first appeared some 20 years later, in 1406. Conrad Grünenberg's armorial of 1483 gives the arms of Serbia as depicted in (i), red with a yellow cross and 'briquets' (see also 63b), but this had not yet become the country's principal emblem when Stephen Lazarevic was succeeded as despot by George Brankovic in 1427. Under George both these arms and a 2-headed yellow eagle on red (see 63a) were used, both reflecting the country's strong Byzantine heritage.

Bosnia seems to have adopted very simple heraldry somewhat earlier than Serbia: (ii) comes from a *stecak* of the late-13th or early-14th century. Bulgaria, on the other hand, had no recorded heraldry at all, though a lion, eagle or acanthus often appears on Shishman dynasty coins (1323-95); the yellow lion on red adopted as Bulgaria's national arms much later in her history undoubtedly derived from its use under the Shishmans. Figure (iii), from a fresco of 1259 in Boiana church, Bulgaria, depicts a crescent, a popular Balkan motif that often appeared on Bogomil *stecaki* as well as in Hungarian, Serbian, Bosnian, Roumanian, Polish and even German heraldry. The crescent, or star and crescent, emblem had in fact been in widespread use in the Byzantine Empire long before it ever appeared amongst the Ottomans and Mamluks, with whom it is more usually associated, and it is likely that they, like the Empire's Balkan neighbours, adopted it from the Byzantines, who had in turn inherited it from their Macedonian ancestors.

The star and crescent were to be found in the arms of both Wallachia and Moldavia during this period. Figure (iv) shows the yellow on red arms of Roman I of Moldavia, dating to 1393, and (v) the yellow on blue arms granted to Mircea the Old by Vladislas II of Poland; the eagle was later usually depicted displayed heraldically. Figure (vi) shows an earlier version of Wallachia's arms that was still to be found in use even after Mircea's death, with the star and crescent element impaling the red and white stripes of Hungary. Figures (vii) to (xvi) are all Wallachian and Moldavian boyars' arms from 14th and 15th century seals, the colours therefore being unknown, alas. With the single exception of (xi), which is Wallachian and dates to 1395, the others all bear a very close resemblance to the 'linear' devices used in Polish arms (see below); (xii) is in fact identical to the Leliwa arms shown in (lvii) and may therefore indicate a Moldavian boyar 'adopted' by that family as explained in the section on Polish arms, while (xiv) is very similar to the Gedymin emblem depicted in figure 144a. During the 15th century some more conventional arms (eg, lions, swords, crossed swords, arms holding swords, armed riders, unicorns, etc) were adopted via Hungary and, to a lesser extent, Poland. For an example, see the shield of figure 79.

Hungary had heraldry from c.1190, but the widespread adoption of arms took place under King Sigismund in the late-14th and early-15th centuries, in particular in emulation of the arms of German knights seen at the Council of Constance (1414-18). Figures (xvii) to (xxii) are all from the 'Armorial de Gelre' of 1370-86 and on the whole demonstrate an affinity with German arms. Figure (xvii) is az, an eagle displayed or; (xviii) or, an eagle displayed dimidiated gu and sa; (xix) qrly, 1 & 4 chequy arg and gu, 2 & 3 arg, an eagle displayed sa; (xx) party per pale arg and gu; and (xxi) az, a mullet of 6 points party per bend or and gu. Figure (xxii), the yellow on red arms of Scibor of Sciborzyce, voivode of Transylvania in the early-15th century, again demonstrates the popularity of the crescent in Balkan heraldry. Hungarian arms appearing after the mid-15th century were of an entirely different and distinctively military character, reflecting the country's unending war against the Ottoman Turks: over 15% of those on record contain severed Turkish heads, sometimes turbaned, always black-moustached, and often dripping blood from the neck. Sometimes the head is shown either held by a warrior or stuck on the point of a sword or lance. Other characteristic coats-of-arms of this



I-XXV: Balkan coats-of-arms

category include armed riders, rearing horses, and an arm holding a sword. Figures (xxiii) and (xxiv) are examples of the last two types, being the arms of the important Kinizsi and Zapolyai families respectively, both of which supplied generals to Matthias Corvinus' armies. As in Germany, Hungarian arms appear not to have been differentiated in any way amongst members of the same family. Figure (xxv) depicts the arms of Janos Hunyadi (also carried on some of his flags by his son Matthias), bendy of 6 arg and az, overall a raven sa on a branch or, holding in the beak a ring of the last.

The Holy Roman Empire

In German heraldry the same arms were used by an entire family, differencing usually being absent altogether from the shield, otherwise being restricted to a simple change of tinctures or, in the case of a quartered shield, a variant combination of the quarters. Crests, however, were invariably differenced. The following is a representative selection of shields from armorials and manuscripts of the 14th and 15th centuries.

(xxvi) The arms of the Holy Roman Emperor. Or, a double-headed eagle displayed sa, membered gu.

(xxvii) The arms of the Archbishop of Mainz, one of the 7 Electors of the Holy Roman Empire. Gu, a wheel with 8 spokes or (sometimes shown with only 6 spokes). After 1356 the other 6 Electors were recognised as the archbishops of Cologne and Trier (xxxiv); the king of Bohemia (xliii); the Count Palatine (*Pfalzgräf*) of the Rhine, Seneschal of the Empire (xcix); the *Markgräf* of Brandenburg, who was the Imperial Chamberlain; and the Duke (*Herzog*) of Saxony, Marshal of the Empire (xxx).

(xxviii) Arms of *Gräf* (Count) von Nidau, who fought at Laupen in 1339 and Poitiers in 1356. Gu, a pale chevronny or and sa.

(xxix) Arms of Heinrich von Klingenberg, who fought for the French at Crécy. Arg, a chief sa.

(xxx) Herzog von Sachsen (Saxony). Barry of 10 or and sa, overall a crancelin (*Kränzlein*, *Rauten kranz* or 'crown of rue') vert. Duke Erich fought in the second crusade against the Hussites.

(xxxi) Herzog von Kronenburg. Qrly, 1 & 4 *vairé* arg and az, 2 gu a crown or, 3 gu.

(xxxii) Herzog von Landau. Or, 3 stag's horns sa in fess one above the other, each with 4 cornichous.

(xxxiii) Gräf von Spanheim (in the Rhenish Palatinate). Chequy arg and gu.

(xxxiv) Archbishop of Cologne. Arg, a cross sa. The Archbishop of Trier bore similar arms, being arg, a cross gu.

(xxxv) Gräf von Magdeburg. Qrly, 1 & 4 az, a lion rampant or, 2 & 3 dimidiated, dexter gu, an eagle displayed arg, sinister barry of 8 gu and arg.

(xxxvi) Gräf von Habsburg (or Hapsburg). Or, a lion rampant gu, armed and langued az. This Austrian family was to become the most powerful in Europe. The first of its scions to attain Imperial power was Frederick V, who became Emperor Frederick III in 1452, the title thereafter remaining in the family's possession until the dissolution of the Empire in 1806.

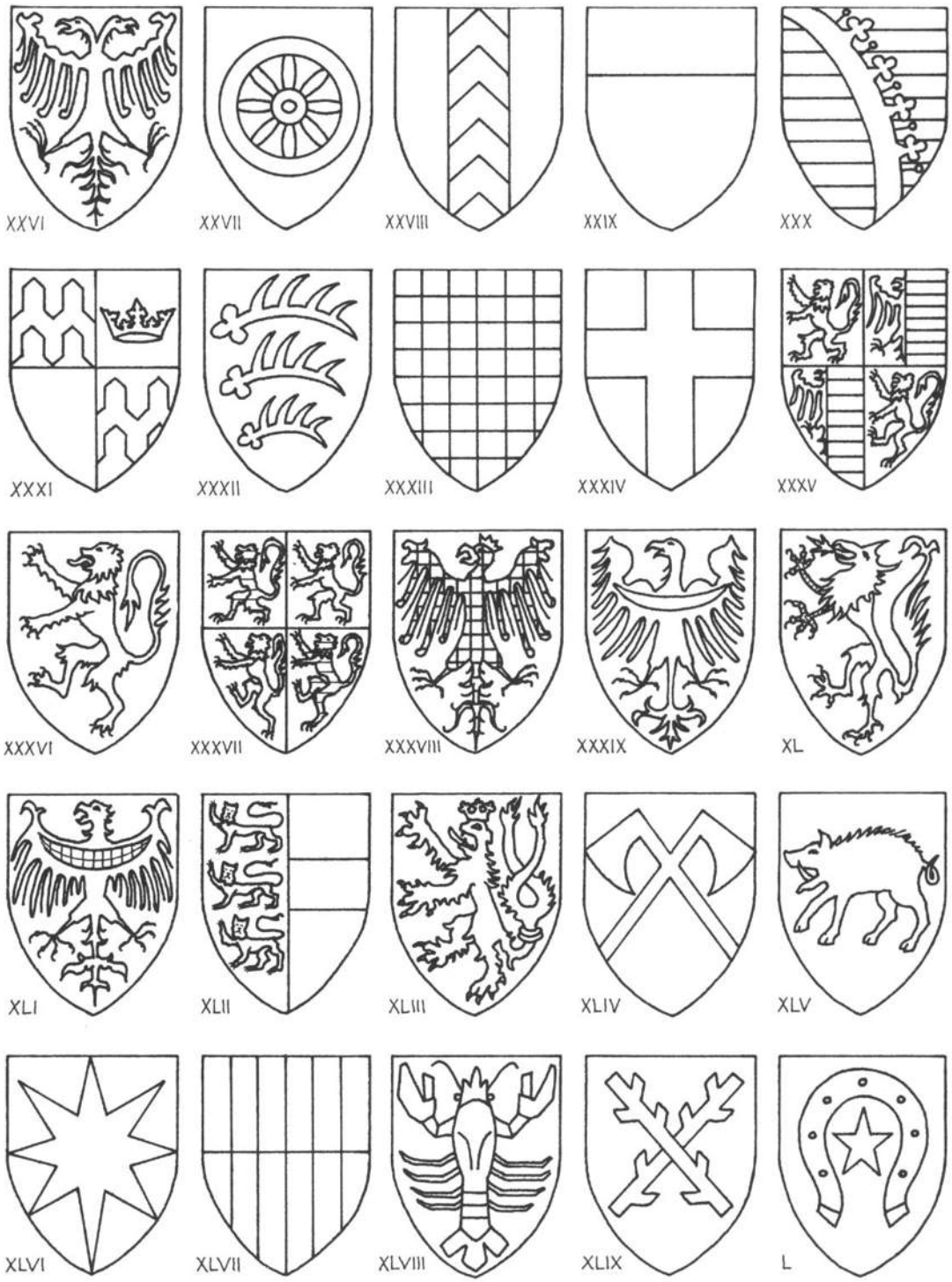
(xxxvii) Markgräf von Meissen. Qrly, 1 & 4 az, a lion rampant barry of arg and gu (Thuringia), 2 & 3 or, a lion rampant sa, armed and langued gu (Meissen). Frederick IV of Wettin, who defeated the Praguer Hussites under Zelivsky at Most in August 1421. His brother Wilhelm von Wettin led 4,000 men in the third anti-Hussite crusade, in 1422.

(xxxviii) Markgräf von Moravia. Az, an eagle displayed chequy arg and gu, membered, crowned and armed or.

(xxxix) Arms of the Duke of Brieg, in Silesia. Or, an eagle displayed sa, langued gu, charged with a crescent arg. The 17 separate duchies that constituted Silesia were all held by related princes of the Piast dynasty, and thus all bore exactly the same arms. They became part of Bohemia in 1368, this being the reason why Polish troops from Silesia could often be found fighting against Poland on behalf of the Bohemians, Germans and Teutonic Knights.

(xl) Herzog von Steiermark (Styria). Vert, a griffin sans wings arg, armed and fire issuant from its mouth gu. Styria is today part of Yugoslavia.

(xli) Herzog von Krain (Carniola). Arg, an eagle displayed az, crowned or, armed and langued gu, charged with a crescent chequy or and gu. Like Styria, Carniola is now part of Yugoslavia.



XXVI-L: German and Bohemian coats-of-arms

(xlii) Herzog von Kärnthen (Carinthia). Or, 3 leopards sa, impaling gu, a fess arg.

(xliii) King of Bohemia. Gu, a lion rampant queué fourcheé and passed in saltire arg, armed and crowned or, langued and dented arg. The double-tailed lion (this is Gelre's rendition of it) appears to have replaced an earlier eagle device in the mid-13th century.

(xliv) to (xlvi) These are from a frieze of c.1360 at Lauf, near Nuremberg, depicting the arms of the Bohemian nobility, in which a stylistic similarity to Polish arms is self-evident. The three depicted are those of the Zbeatlwycz (gu, 2 axes in saltire arg); Dusow (arg, a boar statant vert); and Stirberk (az, a mullet of 8 points arg).

(xlvii) Gräf von Rosenberg. Paly counter-paly of 6, arg and gu. This was an important Bohemian family. Ulrich (Oldrich z Rozmberk) fought energetically for Sigismund against the Hussites and remained leader of the Bohemian Catholic lords until 1431.

(xlviii) The arms of Jan Zizka, leader of the Hussites until his death in 1424. Arg, a lobster gu.

(xlix) The arms of Jan Rohac of Duba. Or, 2 ragged staves crossed in saltire sa. A friend of Zizka and Prokop the Bald, he attempted to renew Hussite resistance after the death of Prokop at the Battle of Lipany, but was beseiged in his castle (Zion), captured, and executed in 1437.

(l) The arms of Jan Rokycana, Hussite archbishop of Prague (d.1471). Az, a mullet or within a horse-shoe arg.

Poland

Polish heraldry differed from that of Western Europe in that many families with different names and no relationship might share a coat-of-arms (*herb*), which bore a special name different from that of the families involved and perhaps originally derived from a tribal or family battle-cry. As in Germany, the arms were shared by an entire family and not just used by the head thereof, and were consequently borne undifferenced by father, sons, brothers, uncles and cousins alike. Furthermore, a custom existed whereby a foreign noble family might enter the ranks of the Polish nobility by 'adoption' by a Polish family, thereafter assuming the coat-of-arms of their patrons (as, for instance, did the Lithuanian nobility following the union of Poland and Lithuania in 1386). As a result there were very few individual coats-of-arms — only 500 in the entire country even as late as the end of the 18th century. Other particular points of difference to note are the presence of many 'linear' charges of alleged runic origin, and the virtual absence of the 'honourable ordinaries' so prominent in Western heraldry; the use of the additional tinctures of grey and brown; and a tendency to ignore the rule that forbade the charging of one colour upon another. Needless to say, detailed information on Polish heraldry of this period is in very short supply and is frequently contradictory, most records having been destroyed in World War Two. However, the following coats-of-arms were among those carried on shields and banners at the Battle of Tannenberg in 1410.

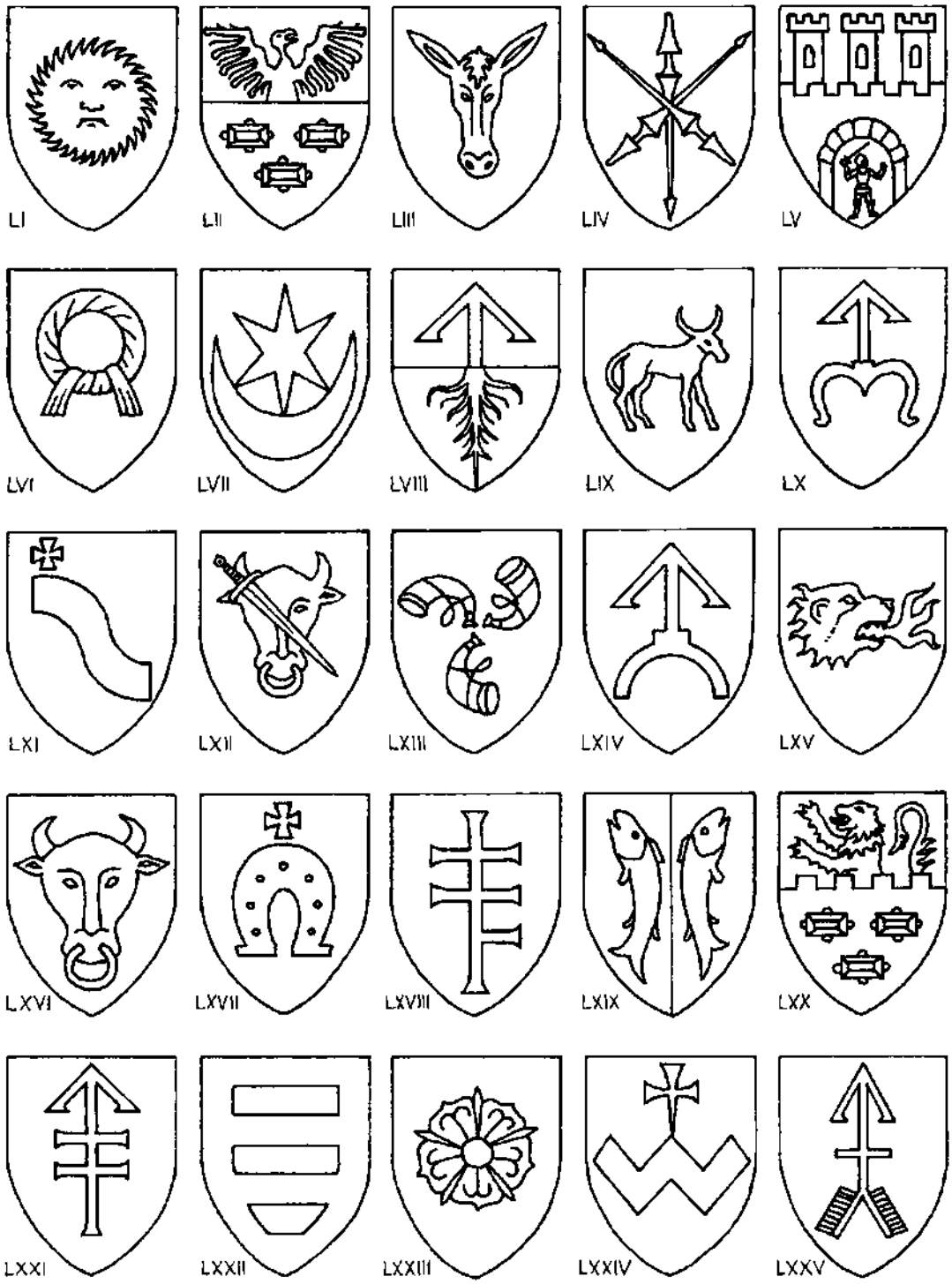
(li) Zyndram of Maszkowice. Az, a sun in splendour or. Sword-bearer of the district of Krakow and the real commander of the Polish-Lithuanian forces, led the Krakow division.

(lii) Zawisza Czarny ('the Black') of Garbow. Coupé or and gu, in chief a demi-eagle issuant sa, in base 3 stones in fittings arg. Another of the Polish commanders and hero of the army. He later fought against the Hussites for Emperor Sigismund, notably in covering the latter's retreat by his defence of Nemecky Brod in 1422. Died fighting against the Turks in Hungary at Golubac in 1428, still in Sigismund's service. The arms are those of the Sulima, borne in addition at the Battle of Tannenberg by his brothers Farurej, Kruszek and Stanislaw (Stach, or Staszko) of Charbimowice, and son Jan. Farurej later fought for Vladislas III in Hungary, 1440-42.

(liii) Marcin of Wrocimowice. Gu, an ass' head caboshed grey. Carried the Great Banner of Poland. The arms are those of the Polkozy, also carried at Tannenberg by Jan Ligezy of Bobrek, voivode of Leczyca, commander of the thirty-second Polish division there.

(liv) Floryan Pelitczyk of Korytnica. Gu, 3 lances or, one in pale point downwards, 2 in saltire points upwards. These arms are those of the Jelita, borne in addition by Floryan Kozlerogi of Korytnica, castellan of Wislice and starosta of Przedecki, who led the forty-eighth Polish division. The original form of the Jelita arms was probably simply a X and | combined.

(lv) Domarat of Kobylany. Or, a castle with 3 towers gu masoned sa, in a gateway or an armoured knight proper. Arms of the Grzymala. Fought in the Krakow division. Jakob of Kobylany, who bore the same arms at the battle, also distinguished himself at the siege of Marienburg and was one of the Polish commanders



LI-LXXV: Polish coats-of-arms

at the Battle of Swienta in 1435. The starosta Janusz of Kobylany commanded 5,000 Poles provided to Emperor Sigismund in 1426 for service against the Ottoman Turks.

(lvi) Jan Nalecz Warszowski ('of Warsaw'). Gu, a scarf arg. Arms of the Nalecz, also borne at Tannenberg by Sedziwoj of Ostrorog, voivode of Poznan, and Dobrogost of Szamotuly, commanders of the twenty-eighth and forty-first Polish divisions respectively.

(lvii) Jan Tarnowski, voivode of Krakow. Az, a mullet of 6 points and crescent or. Led the twenty-seventh division. These are the arms of the important Leliwa group, also borne by Wincentego of Granow, castellan of Szrem and starosta of Great Poland, and by Spytke of Jaroslaw, commanders of the thirty-seventh and thirty-ninth divisions.

(lviii) Pawel (Paszko) Zlodziej ('the Thief') of Biskupice. Coupé gu and or, in chief a demi-arrow arg, in base an eagle's tail sa. Arms of the Niesobia. Fought in the Krakow division.

(lix) Jedrzej Ciolek of Zelenchowo. Arg, a calf facing sinister gu. Joint-commander with (lx) of the royal household division.

(lx) Jan of Sprowa. Gu, a bow in fess and arrow in pale arg. The Odrowaz arms, also borne on the banner of the forty-ninth division led by Helm the Moravian, where it is described as the banner of Jan Jenozykowic, a Moravian lord presumably 'adopted' by the Odrowaz.

(lxi) Mikolaj Kurowskiego, Archbishop of Gniezno. Gu, a river arg, in dexter chief a cross pattée or. Commander of the twenty-fourth division. Szreniawa arms, also borne by Mikolaj Kunityz of Wisnioz, commander of the forty-fifth division, except that his banner is described as having a *red* river (therefore presumably on a field arg?).

(lxii) Bartosz and Jaroslaw of Plomykowo. Or, a bison's head caboshed sa, nose-ring or, overall a sword in bend arg, hilt and pommel or. Two brothers who fought in the front rank of the second division.

(lxiii) Mikolaj, Vice-Chancellor of Poland. Arg, 3 hunting-horns sa, stringed or. Commander of the forty-fourth division.

(lxiv) Mikolaj Powala of Taczow. Gu, a bow in fess and arrow in pale arg. Arms are those of the Ogonczyk, but bear a close resemblance to (lx). (Variants of the stylised bow-and-arrow were, in fact, common charges in Polish heraldry; to mention but one further example, the Sas bore gu, a bow in fess and arrow in pale or.) Sabin of Wychucz, who fought alongside Mikolaj in the front rank of the royal household detachment, bore same arms.

(lxv) Zbigniew of Brzezle, Marshal of Poland. Az, a lion's head erased sa (or grey), fire issuing from its mouth gu. Led 5,000 men in 1408 campaign against Moscow. Commander of the thirty-fourth division at Tannenberg.

(lxvi) Dobieslaw (Dobko) Okwia. Or, a bison's head caboshed sa, nose-ring or. The Wieniawa arms, borne by Dobieslaw in the front rank of the second division and by Jan (or Iwan) of Obichow, castellan of Szrem, who led the thirty-first division. The arms of (lxii) appear to be closely related.

(lxvii) Jakob of Koniecpole, voivode of Sievadz. Gu, a horse-shoe arg, in chief a cross pattée or (?). Commander of the thirtieth division. The arms are those of the Poboz but are unusual in that the field was normally az.

(lxviii) Klemens of Maskorzowo, castellan of Wislica. Az, a patriarchal cross with couped third arm or. Led the thirty-sixth division.

(lxix) Jan Mezyke of Dabrowa. Party per pale gu and arg, 2 trout addorsed counterchanged. Led the forty-third division.

(lxx) Marcin of Slawsko. Brown, a wall embattled arg charged with 3 (or 4) stones in fittings or, a demi-lion sa issuant in chief. Commander of the fortieth division.

(lxxi) Jaxa Lis of Targowisko. Gu, an arrowhead arg. Arms of the Lis. Fought in the front rank of the Krakow division.

(lxxii) Alexander (Lesko) Gorajski ('of Goraj'). Gu, 3 humettes arg. Arms of the Korczak. Alexander fought in the front rank of the royal household detachment.

(lxxiii) Mikolaj of Michalow, voivode of Sandomir. Gu, a rose arg. Commander of the twenty-ninth division.

(lxxiv) Zakliki Korzekwicki. Gu, with the cross pattée fitchée and the curious 'W' device arg. Led the forty-seventh division. Starbek Gorski ('of Gory'), who fought in the Krakow division, bore the same arms sans cross (arms of the Habdank or Abdank).

(lxxv) Gniewosz of Dalewice, podstolego of the district of Krakow. Gu, an arrow arg. Led the fiftieth division, which comprised Polish, Bohemian, Moravian and Silesian knights who he had hired himself.

The adoption of Polish-style heraldry in Lithuania only officially commenced in 1413, but many Lithuanian princes undoubtedly carried their own emblems considerably earlier, the 'columns of Gediminas' (see figure 144a) being the best-known example. Heraldry was similarly introduced into Ruthenia and West Russia under Polish influence during the course of the 15th century but was not adopted on a large scale until as late as the 18th century.

Crusaders

A number of crusading expeditions were launched in the course of the 14th century. Chronologically, these were: 1345-47, the crusade of Humbert II de Viennois; 1361 and 1365, Peter I of Cyprus' raids on Antalya and Alexandria; 1365-67, Amadeus VI of Savoy's crusade; 1390, the Barbary crusade; 1396, the Nicopolis crusade; and 1399, Marshal Boucicault's expedition to Constantinople. The following coats-of-arms are principally those of participants in these various expeditions, plus some belonging to Hospitallers.

(lxxvi) King of Cyprus. Qrly, 1 & 4 arg, a cross potent between 4 crosses or (Jerusalem), impaling barruly of 12 arg and az, overall a lion rampant gu, crowned and armed or, langued az (Lusignan), 2 & 3 Lusignan. These are the arms used from Hugh IV's reign (1324-59). In the 15th century they can also be found as: Qrly, 1 Jerusalem impaling Lusignan, 2 Lusignan, 3 or, a lion rampant gu langued az (Cilician Armenia), 4 arg, a lion rampant gu langued az. The last quarter (which Berry Herald gives c.1415 as gu, a lion rampant or) is sometimes called 'Cyprus', but may actually be Antioch.

(lxxvii) Jean de Morphou. Or, a lion rampant az. Admiral of Cyprus and titular Count of Edessa ('Rochas'), he participated in the attack on Alexandria in 1365, and led 4 galleys in raids on Syrian and Egyptian ports in 1369.

(lxxviii) King of Cilician Armenia. Tierced in pale, 1 Cilician Armenia, 2 Jerusalem, 3 Lusignan. These are the arms of Leon V (1320-41), from his tomb.

(lxxix) Humbert II de Viennois, Dauphin de Vienne. Or, a dolphin embowed az finned and langued gu. Led an inconsequential crusade to Smyrna in 1345-47 with 4 galleys and at least 800 men including 100 men-at-arms. One source refers to 2,300 foot and 70 horse at Mytilene in 1346, another to 400 horse on Negroponte the same year. However, he seemingly arrived at Smyrna with only 30 knights, plus infantry.

(lxxx) Amadeus VI, Comte de Savoie (Savoy). Gu, a cross arg. Led an expedition against the Ottomans, recapturing Gallipoli in 1366, but subsequently became bogged down fighting against the Bulgarians.

(lxxxi) Amadeus III, Comte de Genève (Geneva). Or, a cross quarter-pierced az. He was the first man ashore at Alexandria in 1365, d.1367. Succeeded by son Aymon, who had crusaded with Amadeus of Savoy.

(lxxxii) Hugues de Châlon-Arlay, Sieur d'Arlay. Gu, on a bend or a mullet sa. Crusaded with Amadeus of Savoy, he and his brother Louis commanding 40 men-at-arms. Killed at Nicopolis.

(lxxxiii) Guillaume de Granson. Paly of 6 arg and az, on a baston gu 3 escallops or (probably borne qrly with 2 & 3 arg, a cross gu, as Sieur de Sainte-Croix). Another Savoyard who accompanied Amadeus. A Jean de Granson was killed at Nicopolis.

(lxxxiv) Guillaume VI de Martel, Sieur de Basqueville. Or, 3 martlets gu. Took part in the expedition to Alexandria.

(lxxxv) Renaud, Sieur de Nantouillet. Lozengy arg and gu, a canton or (one source says a chief or). Participated in expeditions to Alexandria and Barbary.

(lxxxvi) Philippe de Mézières. Vert, a fess ermine. Last great protagonist of the crusade. Served Lucchino Visconti 1345, King Andrew of Naples 1346, then in the East and in Serbia, and fought at Smyrna 1346. Fought under d'Audrehem in Normandy in the 1350s. Became Chancellor of Cyprus for Peter I 1359-69. Took part in the assault on Alexandria, d.1405.

(lxxxvii) Robert le Gallois, Sieur d'Aunoy. Gu, a chief or. Took part in the Barbary crusade. Guillaume d'Aunoy fought at Nicopolis.

(lxxxviii) Jean des Bordes, Châtelain de Beauvais. Arg, on a cross sa 5 escallops or. Fought at Nicopolis.

(lxxxix) Charles, Sieur d'Estouteville. Barry arg and gu, a lion rampant sa. Fought at Nicopolis. Another Estouteville, Nicolas, Seigneur de Torcy, took part in the raid on Alexandria and bore the same arms with a collar or on the lion; his son Jean participated in the Barbary crusade.

(xc) Le Sieur de Garancières. Gu, 3 chevronels or. In Barbary crusade. A son took part in the Nicopolis expedition, probably Guy le Baveus, who bore the chevrons arg.

(xci) Jean de Hangest, Seigneur d'Hugueville. Or, on a cross gu 5 escallops or, overall a label az. Fought at Nicopolis, became Grand Master of the Crossbowmen 1403, d.1407.

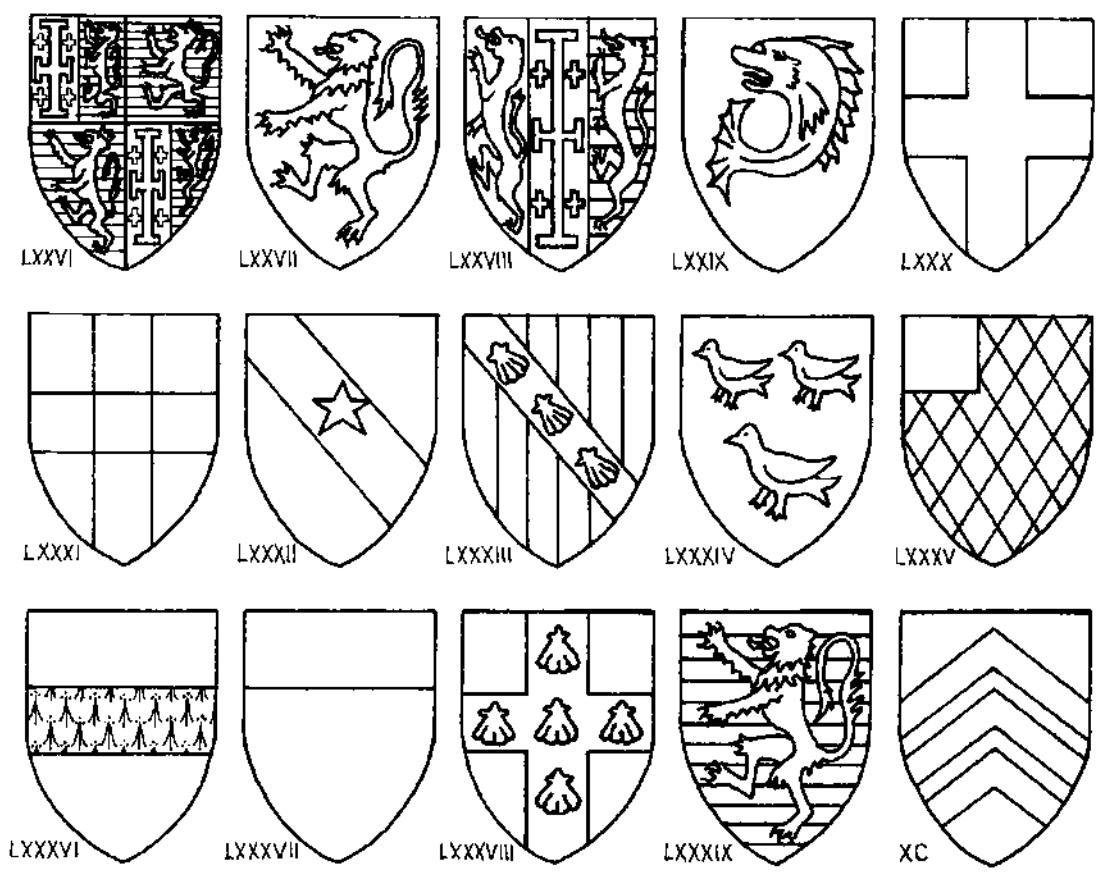
(xcii) Florimont de Lesparre. Party per pale, dexter arg, a lion rampant gu, sinister lozengy or and gu. Sailed with a small band in 1365 to assist the Cypriots. In 1366 sacked Tripoli with 15 galleys after dispersal of the Cypriot fleet in a storm. Participated in Amadeus of Savoy's crusade.

(xciii) Jean Friant de Montigny. Or, an inescutcheon gu. Participated in Barbary and Nicopolis expeditions.

(xciv) Thibaut de Neuchâtel, Seigneur de Châtelot. Gu, a bend arg. Killed at Nicopolis. Jean, Seigneur de Roye, bore the same arms in the battle and was also killed; his son Matthieu, also present, differenced the arms with a label az.

(xcv) Savari de Vivonne, Seigneur de Thouars. Or, semé-de-lis az, a quarter gu. Killed at Nicopolis.

(xcvi) Le Vicomte de Rochechouart. Barry of 6 arg and gu. At Nicopolis.



LXXVI-XC: Crusader coats-of-arms

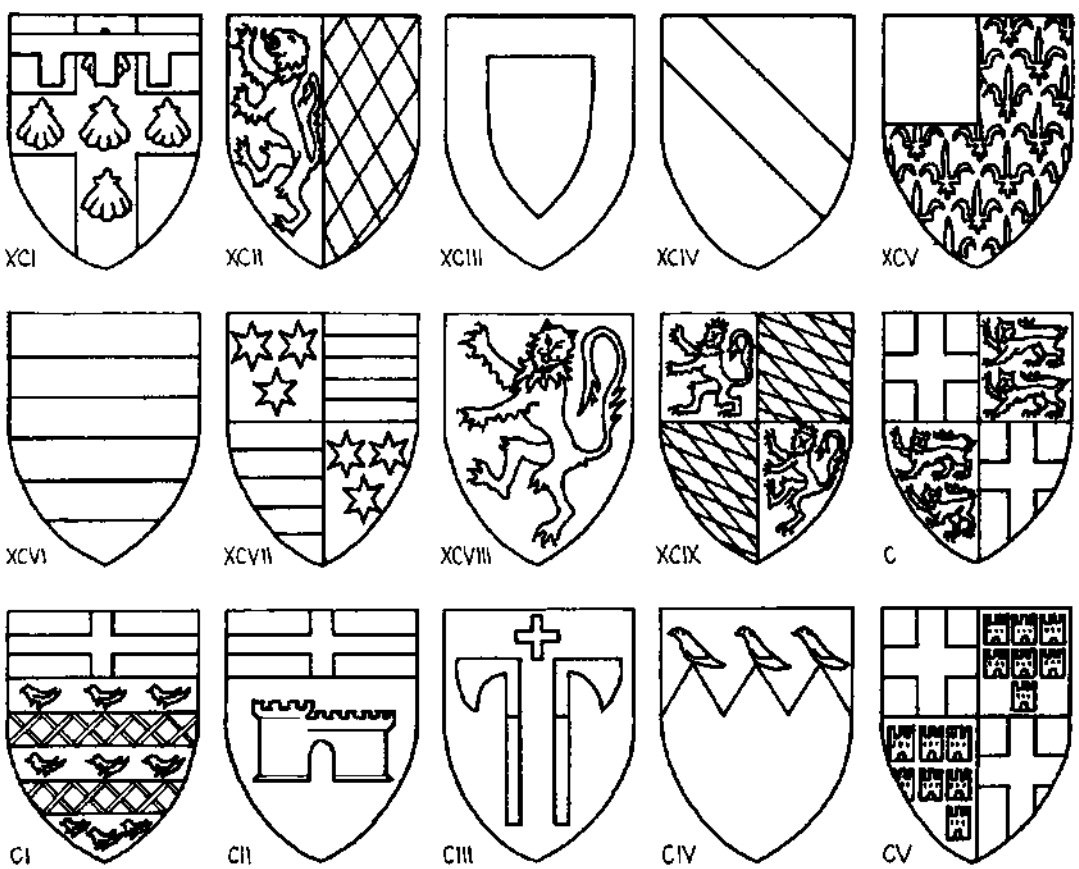
(xcvii) Hermann II, Gräf von Cilli. Qrly, 1 & 4 az, 3 mullets or, 2 & 3 gu, 2 bars arg. Together with the Grand Master of the Hospital, the Burgräf von Nurnberg and others, he assisted King Sigismund from the stricken field of Nicopolis and onto a barge on the Danube, from which they were picked up by a Venetian galley. Cilli was an Austrian principality on the Hungarian border between Carniola and Carinthia. Hermann's son and successor Ulrich (1406-56) became Ban of Croatia but was murdered by Janos Hunyadi's sons, after which most of the Cilli lands passed to the Habsburgs.

(xcviii) Johann III, Gräf von Katzenellenbogen. Or, a lion rampant guardant gu, armed and langued az. Another of the principal German leaders at Nicopolis.

(xcix) Ruprecht Pipan, Count Palatine. Qrly, 1 & 4 sa, a lion rampant guardant crowned or (Palatinate), 2 & 3 bendy lozengy arg and az (Bavaria). One of the few leaders of the Nicopolis crusade to escape, he died of wounds or exhaustion soon after arriving back in Bavaria.

(c) Phillibert de Naillac, Grand Master of the Hospital (1396-1421). Qrly, 1 & 4 gu, a cross arg, 2 & 3 vert, 2 leopards in pale or. Led the Hospitallers who fought alongside Sigismund at Nicopolis and escaped with him. The practice of quartering their personal arms with those of the Order was commonplace amongst Hospitaller Grand Masters from about the mid-14th century.

(ci) Domenico d'Allemagna, Admiral of the Hospital. Or, 2 bars gu fretty arg between 9 martlets gu (3.3.3), on a chief gu a cross arg. Admiral 1392-98, he was probably amongst the contingent of Hospitallers who fought at Nicopolis, probably commanding the small flotilla that must have accompanied the Venetian fleet. The arms are taken from a carving on Rhodes and demonstrate the frequent use by senior Hospitaller officers (perhaps only the bailiffs) of a chief of the Order in conjunction with their personal arms. (A variant of his arms at Smyrna drops the chief and has the martlets as an orle.)



XCI-CV: Crusader coats-of-arms

(cii) An anonymous Hospitaller coat-of-arms of 1415 from the walls of Rhodes, again demonstrating the popular use of a chief of the Order.

(ciii) Otto von Stendal, Brother Knight of the Hospital. Gu, 2 broad-axes addorsed and in chief a crosslet arg. This demonstrates another use of the Order's arms, this time facilitated by the red field of Stendal's own coat (1355). Stendal held the rank of commander.

(civ) Foulques de Villaret, Grand Master of the Hospital (1305-19). Gu, on a chief dancetty or 3 martlets sa. It was Villaret who captured Rhodes from the Byzantines.

(cv) Juan Fernández de Heredia, Grand Master of the Hospital (1376-96). Qrly, 1 & 4 gu, a cross arg, 2 & 3 gu, 7 castles with 3 towers or (3.3.1). As an example of how contemporary records of coats-of-arms can vary, Heredia's own arms are depicted as 3 castles in carvings at Smyrna and Kos, and as 5 castles (2.1.2) and 7 castles (2.1.2.1.1) at Rhodes.

For the arms of other French knights who participated in the Barbary and Nicopolis expeditions see volume 1, appendix 2, notes (cxxi), (cxlvi), (clviii), (clx), (clxxi), (clxxxiii), (clxxxv), (clxl), (clxlviii), (ccii) and (ccviii).

APPENDIX 2 SELECT BIBLIOGRAPHY

In what is, in most areas, an immensely difficult subject to study (unless you are fluent in at least a dozen European languages), the following books and articles are those which I found to be of the greatest value in the course of my research.

Alef, Gustave. 'Muscovite Military Reforms in the Second Half of the Fifteenth Century' *Forschungen zur Osteuropäischen Geschichte XVIII*, 1973

Atiya, Aziz Suryal. *The Crusade of Nicopolis*, 1934

— *The Crusade in the Later Middle Ages*, 1938

Ayalon, David. 'Studies in the Structure of the Mamluk Army' *Bulletin of the British School of Oriental and African Studies XV*, 1953 and *XVI*, 1954

— *Gunpowder and Firearms in the Mamluk Kingdom: A Challenge to a Mediaeval Society*, 1956

— *Studies on the Mamluks of Egypt (1250-1517)*, 1977

Babinger, Franz. *Mehmed the Conqueror and his Time*, 1978

Bain, R.Nisbet. 'The Siege of Belgrade by Muhammad II, July 1-23 1456' *English Historical Review VII*, 1892

Bak, János M. and Király, Béla K. (Eds). *From Hunyadi to Rakoczi: War and Society in Late Medieval and Early Modern Hungary*, 1982

Barker, John Walton. *Manuel II Palaeologus (1391-1425)*, 1969

Belabre, Baron de. *Rhodes of the Knights*, 1908

Beldiceanu, Nicoara. *Le Monde Ottoman des Balkans (1402-1566): Institutions, Société, Economie*, 1976

— *Le Timar dans l'Etat Ottoman (debut XIVe-debut XVIe siècle)*, 1980

— and Villain-Gandossi, Christiane. 'Gecim: Une Armure pour Homme et Cheval' *Turcica XII*, 1980

Bey, M.Max Herz. 'Armes et Armures Arabes' *Bulletin de l'Institut Francais d'Archéologie Orientale VII*, 1910

Boase, T.S.R (Ed). *The Cilician Kingdom of Armenia*, 1978

Du Boulay, F.R.H. *Germany in the Later Middle Ages*, 1983.

Blöndal, Sigfús and Benedikz, Benedikt S. *The Varangians of Byzantium: An Aspect of Byzantine Military History*, 1978

Bradford, Ernle. *The Shield and the Sword — The Knights of St John*, 1972

Bréhier, Louis. *Les Institutions de l'Empire Byzantin*, 1949

Brockman, Eric. *The Two Sieges of Rhodes 1480-1522*, 1969

Browning, Robert. 'A Note on the Capture of Constantinople in 1453' *Byzantion XXII*, 1952

Bryer, Anthony A.M. *The Empire of Trebizond and the Pontos*, 1980

Carstens, F.L. *The Origins of Prussia*, 1954

Charanis, Peter. 'Strife Among the Palaeologi and the Ottoman Turks, 1370-1402' *Byzantion XVI*, 1942-43

Christiansen, Eric. *The Northern Crusades: The Baltic and the Catholic Frontier 1100-1525*, 1980

Cipolla, Carlo M. *Guns and Sails in the Early Phase of European Expansion 1400-1700*, 1965

Curtin, Jeremiah. *The Mongols in Russia*, 1908

Dames, Mansel Longworth (Trans). *The Book of Duarte Barbosa* (2 volumes) 1918

Dawkins, R.M. (Trans). *Recital concerning the Sweet Land of Cyprus entitled 'Chronicle'*, 1932

— 'The Later History of the Varangian Guard: Some Notes' *Journal of Roman Studies XXXVII*, 1947
Digby, Simon. *War-horse and Elephant in the Dehli Sultanate: A Study of Military Supplies*, 1971
Drishti, Riza. 'L'Utilisation des Armes à Feu par les Troupes de Skanderbeg' *Studia Albanica V*, 1968
Elliot, Sir H.H. (Trans). *The History of India as told by its own Historians, volumes III and IV*, 1871-72
Emmert, Thomas Allan. *The Battle of Kosovo: A reconsideration of its Significance in the Decline of Medieval Serbia*, 1973 (unpublished PhD dissertation)
Encyclopaedia of Islam (4 volumes) 1913-29, second edition 1960- (in progress)
Fincham, H.W. (Ed). *Caoursin's Account of the Siege of Rhodes in 1480: Translated into English by John Kay, the Poet-Laureate to King Edward IV*, 1926
Finlay, George. *History of the Byzantine and Greek Empires from 716 to 1453, volume II*, 1854
Fischel, Walter J. (Trans). 'A New Latin Source on Tamerlane's Conquest of Damascus (1400/1401)' *Oriens IX*, 1956
Florescu, Radu and McNally, Raymond T. *In Search of Dracula: A True History of Dracula and Vampire Legends*, 1973
— *Dracula: A Biography of Vlad the Impaler 1431-1476*, 1974
Gegaj, Athanase. *L'Albanie et l'Invasion Turque au XVe siècle*, 1937
Gibb, H.A.R. and Bowen, Harold. *Islamic Society and the West, volume I*, 1950
Gibbons, Herbert Adams. *The Foundation of the Ottoman Empire: A History of the Osmanlis up to the Death of Bayezid I (1300-1403)*, 1916
Goodenough, Lady (Trans). *The Chronicle of Muntaner, volume II*, 1921
Gorelik, Michael V. 'Oriental Armour of the Near East from the Eighth to the Fifteenth Centuries as shown in Works of Art' in Elgood, Robert (Ed) *Islamic Arms and Armour*, 1979
Gorski, Karol (Ed). *Jana Dlugosza: Banderia Prutenorum*, 1958
Guilland, R. *Recherches sur les Institutions Byzantines* (2 volumes) 1967
Gush, George. *Renaissance Armies 1480-1650*, 1982
Hamblin, William. 'Infantry in Mamluk Armies' *Slingshot 103-104*, 1982
Hazard, Harry W. (Ed). *A History of the Crusades, volume III: The Fourteenth and Fifteenth Centuries*, 1975
Held, Joseph. 'Military Reform in Early Fifteenth Century Hungary' *East European Quarterly XI*, 1977
Hernández, Frances (Trans). *The Catalan Chronicle of Francisco de Moncada*, 1975
Heymann, Frederick G. *John Zizka and the Hussite Revolution*, 1955
— *George of Bohemia: King of Heretics*, 1965
Hill, George. *A History of Cyprus, volumes II and III*, 1948
Hookham, Hilda. *Tamburlaine the Conqueror*, 1962
Howorth, H.H. *History of the Mongols from the 9th to the 19th Centuries* (4 volumes) 1876-88
Inalcik, Halil. 'Ottoman Methods of Conquest' *Studia Islamica II*, 1954
— *The Ottoman Empire: The Classical Age 1300-1600*, 1973
Jirecek, C. *La Civilisation Serbe au Moyen Age*, 1920
Jones, J.R.Melville (Trans). *Nicolò Barbaro: Diary of the Siege of Constantinople 1453*, 1969
— (Trans). *The Siege of Constantinople 1453: Seven Contemporary Accounts*, 1972
Jurgela, Constantine R. *Tannenberg (Eglija-Grunwald), 15 July 1410*, 1961
Káldy-Nagy, Gyula. 'The First Centuries of the Ottoman Military Organization' *Acta Orientalia Academiae Scientiarum Hungaricae XXXI*, 1977
Kindersley, Anne. 'The Battle of Kossovo, 1389' *History Today XX*, 1970
Klopf, Margaret. 'The Army in Constantinople at the Accession of Constantine XI' *Byzantion XL*, 1970
Lane, Frederic C. *Venetian Ships and Shipbuilders of the Renaissance*, 1934
— *Venice, A Maritime Republic*, 1973
Latham, J.D. 'Notes on Mamluk Horse-Archers' *Journal of the British School of Oriental and African Studies XXXII*, 1969
— and Paterson, W.F. *Saracen Archery*, 1970
Lazarovich-Hrebelianovich, Prince. *The Servian People: Their Past Glory and their Destiny* (2 volumes) 1911
Lefroy, J.H. 'The Great Cannon of Muhammad II (AD 1464)' *Archaeological Journal XXV*, 1868
Letts, Malcolm (Trans). *Pero Tafur: Travels and Adventures, 1435-1439*, 1926
— (Trans). *The Pilgrimage of Arnold von Harff, Knight*, 1946
Lowe, Alfonso. *The Catalan Vengeance*, 1972
Luttrell, Anthony. 'John Cantacuzenus and the Catalans in Constantinople: 1352-1354' in *Martinez Ferrando, Archivero: Miscelánea de Etudios dedicados a su Memoria*, 1968
— *The Hospitallers in Cyprus, Rhodes, Greece and the West 1291-1440*, 1978
Lützow, Count F.H.H.V. von. *The Hussite Wars*, 1914
Magoulias, Harry J. (Trans). *Decline and Fall of Byzantium to the Ottoman Turks, by Doukas*, 1975
Mallett, M.E. and Hale, J.R. *The Military Organization of a Renaissance State: Venice c.1400-1617*, 1984

Mayer, L.A. *Saracenic Heraldry: A Survey*, 1933
— *Mamluk Costume*, 1952
McGuire, Michael W. *Jan Zizka and the Hussite Wars 1419-1434*, 1976
Mijatovich, Elodie Lawton. *Kossovo*, 1881
Miller, William. *The Latins in the Levant: A History of Frankish Greece (1204-1566)*, 1908
— *Trebizond: The Last Greek Empire*, 1926
Minorsky, Vladimir. 'A Civil and Military Review in Fars in 881/1476' *British School of Oriental Studies X*, 1939
— (Trans). *Persia in AD 1478-1490*, Royal Asiatic Society Monographs XXVI, 1957
Mitchell, James (Trans). *A History of the Maritime Wars of the Turks, translated from the Turkish of Haji Khalifeh*, 1831
Nadvi, Syed Abu Zafar. 'The use of Cannon in Muslim India' *Islamic Culture XII*, 1938
Nickels, A.L. 'The Teutonic Knights' *Slingshot VII*, 1966
Nicol, Donald M. *The Last Centuries of Byzantium 1261-1453*, 1972
Nicolle, David. 'The Impact of the European Couched Lance on Muslim Military Tradition' *Journal of the Arms & Armour Society X*, 1980
— *Armies of the Ottoman Turks 1300-1774*, 1983
Noli, Fan Stylian. *George Castrioti Scanderbeg (1405-1468)*, 1947
Obolensky, Dimitri. *The Byzantine Commonwealth: Eastern Europe, 500-1453*, 1971
Oman, C.W.C. *A History of the Art of War in the Middle Ages, volume II*, 1924
Palmer, J.A.B. 'The Origin of the Janissaries' *Bulletin of the John Rylands Library XXXV*, 1952-53
Parry, V.J. and Yapp, M.E. (Eds). *War, Technology and Society in the Middle East*, 1975
Pears, Edwin. *The Destruction of the Greek Empire and the Story of the Capture of Constantinople by the Turks*, 1903
Pertusi, Agostino. 'The Anconitan Colony in Constantinople and the Report of its Consul, Benvenuto, on the Fall of the City' in Laiou-Thomadakis, A.E. *Charanis Studies: Essays in Honor of Peter Charanis*, 1980
Philippides, Marios (Trans). *The Fall of the Byzantine Empire: A Chronicle by George Sphrantzes, 1401-1477*, 1980
Poliak, A.N. *Feudalism in Egypt, Syria, Palestine and the Lebanon 1250-1900*, 1939
Pollo, Stefanaq and Puto, Arben. *The History of Albania*, 1981
Popper, William (Trans). 'History of Egypt 1382-1469 AD' *University of California Publications in Semitic Philology XIII-XIX* and *XXII-XXIII*, 1954-60
Qureshi, Ishtiaq Husain. *The Administration of the Sultanate of Dehli*, 1971
Riggs, Charles T. (Trans). *History of Mehmed the Conqueror by Kritovoulos*, 1954
Robinson, H.Russell. *Oriental Armour*, 1967
Rosetti, R. 'Stephen the Great of Moldavia and the Turkish Invasion (1457-1504)' *Slavonic Review VI*, 1927-28
— 'Notes on the Battle of Nicopolis (1396)' *Slavonic and East European Review XV*, 1936-37
Runciman, Sir Steven. *The Fall of Constantinople 1453*, 1969
— *Mistra: Byzantine Capital of the Peloponnese*, 1980
Sarma, M.Somasekhara. *History of the Reddi Kingdoms (c.1325 AD to c.1448 AD)*, 1948
Savage, Henry L. 'Enguerrand de Coucy VII and the Campaign of Nicopolis' *Speculum XIV*, 1939
Savu, A.G. (Ed). *Pages from the History of the Romanian Army*, 1975
Scanlon, George T. (Trans). *A Muslim Manual of War*, 1961
Schefer, Charles. *Le Voyage d'Outremer de Bertrandon de la Broquière*, 1892
Schwoebel, Robert. *The Shadow of the Crescent: The Renaissance Image of the Turk (1453-1517)*, 1967
Serif, Bastav. *Ordo Portae: Description Grecque de la Porte et de l'Armée du Sultan Mehmed II*, 1947
Setton, Kenneth M. *The Papacy and the Levant (1204-1571), volumes I and II*, 1976-78
Seward, Desmond. *The Monks of War — The Military Religious Orders*, 1972
Sewell, Robert. *A Forgotten Empire (Vijayanagar): A Contribution to the History of India*, 1900
Shaw, Stanford J. *History of the Ottoman Empire and Modern Turkey, volume 1*, 1976
Sinor, Denis. *History of Hungary*, 1959
Siuchinski, M. and Kobylinski, S. *Ilustrowana Kronika Polakow*, 1971
Skrivanic, Gavro A. *Oruyje u Srednje-Vekovnoj Srbiji, Bosni i Dubrovniku* (Armour and Weapons in Mediaeval Serbia, Bosnia and Dubrovnik), Serbian Academy of Sciences Monographs CCXCII, 1957
Smith, G.Rex. *Medieval Muslim Horsemanship: A Fourteenth-Century Arabic Cavalry Manual*, 1979
Smith, Lucy Toulmin. 'Expeditions to Prussia and the Holy Land made by Henry Earl of Derby in the Years 1390-1 and 1392-3' *Camden New Series LII*, 1894
Stocklein, Hans. 'Arms and Armour' in Pope, A.V. *A Survey of Persian Art*, 1965

Stoicescu, N. 'Contribution à l'Histoire de l'Armée Roumaine au Moyen Age' *Revue Roumaine d'Histoire VI No.5*, 1967
Stolz, Benjamin (Trans) and Soucek, Svat. *Konstantin Mihailovic: Memoirs of a Janissary*, 1975
LeStrange, Guy (Trans). *Clavijo: Embassy to Tamerlane, 1403-1406*, 1928
Sugar, Peter F. *Southeastern Europe under Ottoman Rule, 1354-1804*, 1977
Tantum, G. 'Muslim Warfare: A Study of a Medieval Muslim Treatise on the Art of War' in Elgood, Robert (Ed). *Islamic Arms and Armour*, 1979
Telfer, J.Buchan (Trans). *The Bondage and Travels of Johann Schiltberger, a Native of Bavaria, in Europe, Asia and Africa, 1396-1427*, 1879
Thomas, William and Roy, S.A. (Trans), Lord Stanley of Alderley (Ed). *Travels to Tana and Persia by Josafa Barbaro and Ambrogio Contarini*, 1873
Thordeman, Bengt. *Armour from the Battle of Wisby, 1361* (2 volumes) 1939
Tipton, Charles L. 'The English at Nicopolis' *Speculum XXXVII*, 1962
Topping, Peter. 'Albanian Settlements in Medieval Greece: Some Venetian Testimonies' in Laiou-Thomadakis, A.E. *Charanis Studies: Essays in Honor of Peter Charanis*, 1980
Urban, William. 'The Organisation of Defense in the Livonian Frontier in the Thirteenth Century' *Speculum XLVIII*, 1973
— *The Livonian Crusade*, 1981
— and Smith, Jerry C. (Trans). *The Livonian Rhymed Chronicle*, 1977
Vacalopoulos, Apostolos E. *Origins of the Greek Nation: The Byzantine Period, 1204-1461*, 1970
Vernadsky, George. *The Mongols and Russia*, 1953
— *Russia at the Dawn of the Modern Age*, 1959
Vryonis Jr, Speros. 'Isidore Glabas and the Turkish Devshirme' *Speculum XXXI*, 1956
— *The Decline of Mediaeval Hellenism in Asia Minor and the Process of Islamization from the Eleventh through the Fifteenth Century*, 1971
Wagner, Eduard, Drobná, Zoroslava and Durdnik, Jan. *Medieval Costume, Armour and Weapons (1350-1450)*, 1962
Webb, John (Trans). 'A Survey of Egypt and Syria, undertaken in the Year 1422, by Sir Gilbert de Lannoy, Knt' *Archaeologia XXI*, 1827
West, Alick (Trans), Farkas, I., Horn, S. and Racz, E. *The Hungarian Illuminated Chronicle: Chronica de Gestis Hungarorum*, 1969
Williams, Alan R. 'Some Firing Tests with Simulated Fifteenth-Century Handguns' *Journal of the Arms & Armour Society VIII*, 1974-76
Woods, John E. *The Aqquyunlu Clan, Confederation, Empire: A Study in 15th/9th Century Turko-Iranian Politics*, 1976
Wright, Thomas (Trans). 'The Travels of Bertrandon de la Brocquière, AD 1432, 1433' in *Early Travels in Palestine*, 1855
Zakythinos, Denis A. *La Despotat Grec de Morée: Vie et Institutions*, 1975
Ziada, M.M. and LaMonte, John L. 'Bedr ed Din al-'Aini's Account of the Conquest of Cyprus 1424-1426' *Annuaire de l'Institut de Philologie et d'Histoire Orientales & Slaves VII*, 1939-44

For a better understanding of the geography of this period, with its constantly changing frontiers and complex political relationships, the following are invaluable:

Barraclough, Geoffrey (Ed). *The Times Atlas of World History*, 1981
Kinder, Hermann and Hilgemann, Werner. *The Penguin Atlas of World History, volume 1*, 1980
McEvedy, Colin. *The Penguin Atlas of Medieval History*, 1969