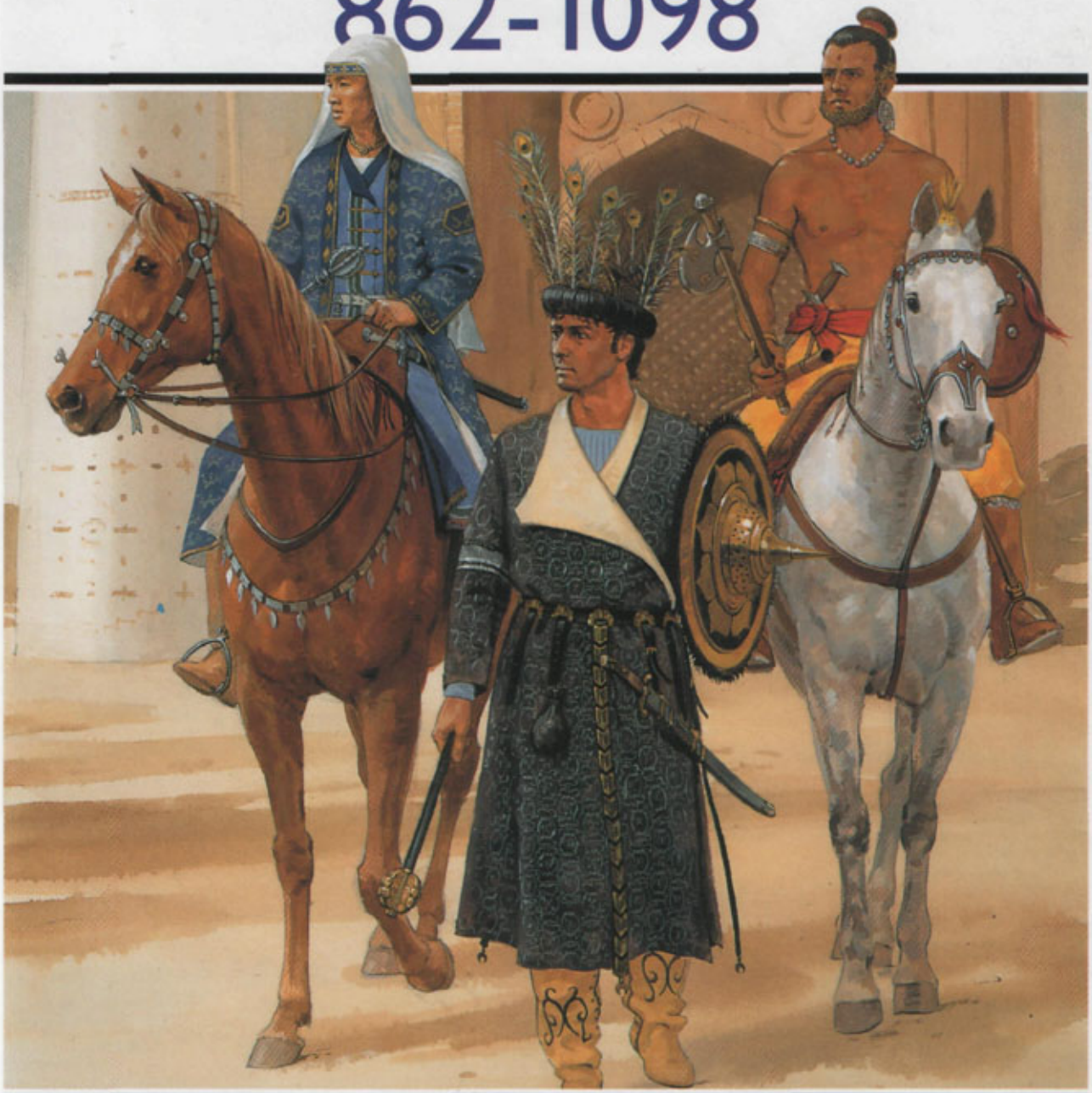
OSPREY MILITARY
MEN-AT-ARMS SERIES 320

ARMIES OF THE CALIPHATES 862-1098



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ARMIES OF THE CALIPHATES 862-1098

INTRODUCTION

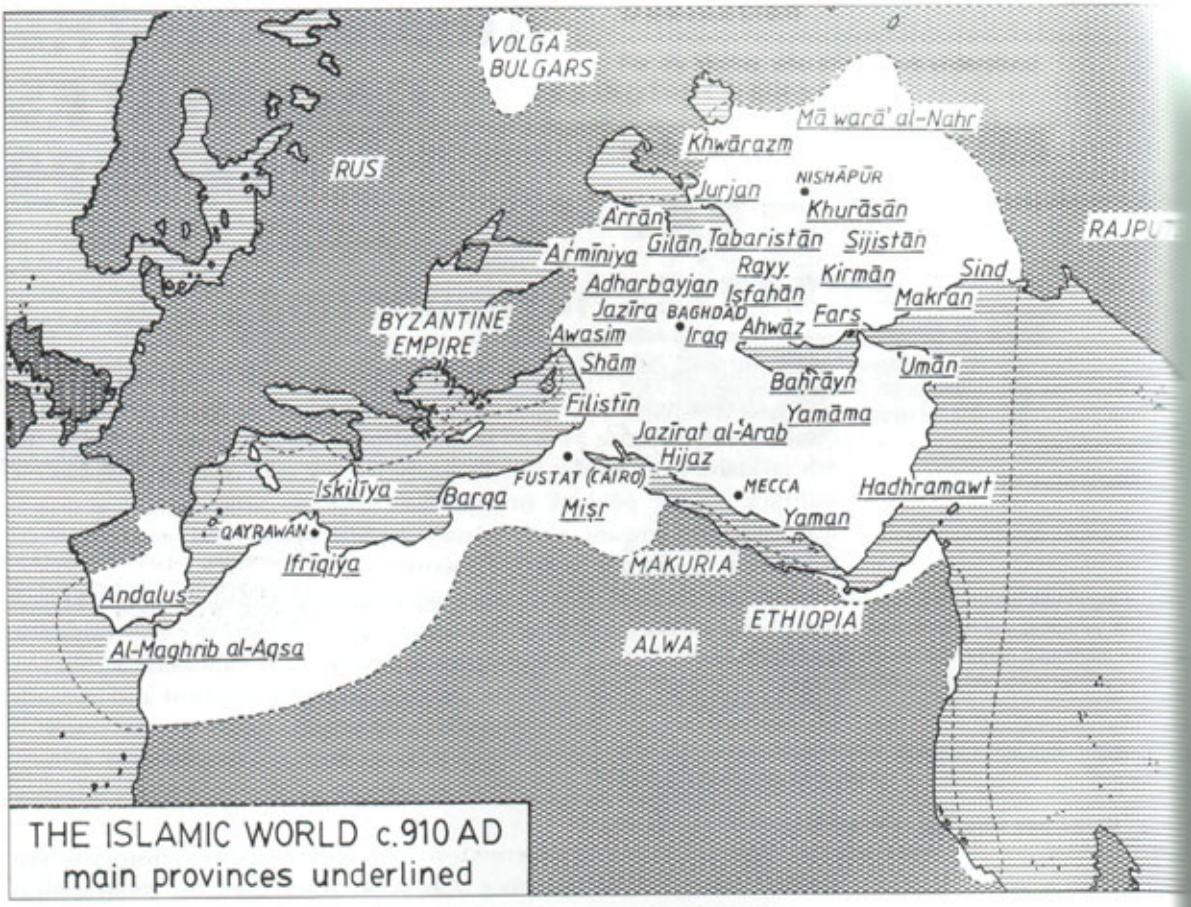
Some historians divide history into periods dominated by one civilisation. Greece, Rome, India, China, Western Europe and North America have all had their moment in the sun, but from the 8th to 11th centuries the Islamic world led the way. Nevertheless Islamic military power peaked in the 9th century, after which political fragmentation meant that Islam's technological and organisational superiority could not be fully effective.

At the start of this Islamic golden age the Sunni Muslim 'Abbāsid Caliphate, with its capital at Baghdad, ruled virtually the entire Islamic world. By the end of it, the spiritual authority of the 'Abbāsid Caliphs was still accepted by most Muslims, yet they had little political and virtually no military power. The 'Abbāsid collapse was, however, the result of economic bankruptcy rather than military defeat. A sequence of military dictators followed, while distant provinces of the 'Abbāsid Caliphate continued to fall away.

This pattern of history means that medieval Islamic history is best studied on the basis of ruling dynasties rather than on geographical states. Another characteristic feature was the 'Iranianisation' of most armies and a more limited 'Turkification' of their cavalry élites. Nevertheless, many traditional Arab military values were retained by non-bedu armies, such as physical toughness, wily warfare and an avoidance of casualties. Arab ideals of manhood had also been inherited, above all the idea that men should do something to promote what they believed in, rather than accept insult or injustice passively. Similarly, family origins counted for relatively little, and greater respect was given to individual achievements. The Muslim faith remained central to the motivation of soldiers, whether professionals or part-time volunteers. Religious scholars also played an increasingly important role in most armies, for both legal and morale-boosting reasons. As authority fragmented, armies became smaller and more professional, while part-timers were relegated to urban militias and the frontiers.

...medallion of the 'Abbāsid ... al-Muqtadir B'illah, Iraq ... century. (National ... Baghdad)

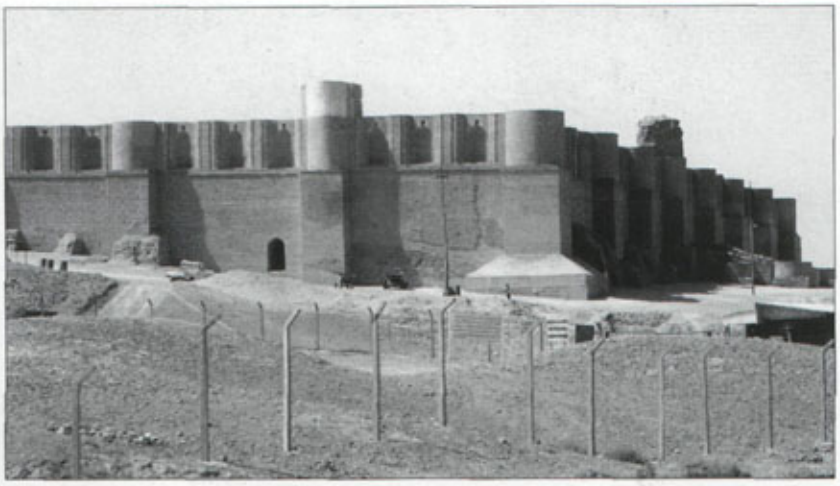
A fully developed 'theory of warfare' also appeared, with books written on all aspects. Arabic translations of Aelian's Greek *Tactika* had been known since the 8th century, and other Byzantine and Greek military or naval manuals were similarly translated. Treatises were also taken



from Persian, Indian and possibly other languages, in each case be updated to deal with current conditions. Meanwhile, the smal successor states of the 'Abbāsid Caliphate tried to continue existi military systems with limited resources and under differing lo conditions. Weaker political foundations among such successor sta also meant that waging *jihād* in defence of Islam became more import as a way of conferring legitimacy to a regime.

HEARTLANDS AND FRONTIERS

The decline of the 'Abbāsid Caliphate coincided with unrest in ma regions and a shift in trade patterns. One result was the decline of Ira wealth and potential, and an increase in that of Egypt. A virtual colla of central authority in 10th century Syria and the Jazîra (Up Mesopotamia) led to a revival in the power of Arab bedouin tribes w established several small though cultured states close to the Byzanti frontier. In Egypt, as in Syria, Christians still formed the majority of t population, but here civilians took almost no part in warfare. In fa Egypt, Libya and Syria together formed the culturally brilliant, thou militarily weak Fāṭimid Caliphate. Its armies were almost entirely n Egyptian and increasingly mercenary. Furthermore, they were s between Sunni Muslim Turks, Armenian Christians, Africans (wh



Qaṣr al-Ashiq on the west bank of the Tigris, built by Caliph al-Mu'tamid in the late 9th century. (Author's photograph)

loyalty to the was personal rather religious), and several mutually antagogroups. Arabia, the place of Islam, was, in ways, now considered ntier' zone. Mecca, a and the Red Sea were usually under ian authority, while who ruled Iraq ruled of the Gulf coast. centre of the Arabian nsula was dominated cal tribes and fols of the puritanical and revolutionary Qarmaṭī movement.

The frontier between the 'Abbāsid Caliphate and the Byzantine e was a largely depopulated no-man's land which both sides ed to keep as an ideological frontier. Even so this 'emptiness' has bly been exaggerated, with local political alliances and even ges across the frontier being common. It is, in fact, interesting to how many Arab names and originally Islamic military titles are in the lead seals of the 10th-11th century Byzantine aristocracy. al small states emerged on the Islamic side of the frontier, ding the Kurdish Marwānids founded by a leader of frontier teers. Christian Armenian kingdoms also re-emerged in the century under the nominal suzerainty of the Caliph. In what is Georgia, the capital Tiblisi was largely Muslim, with Christians living e mountains, while to the east in what is now Azerbaijan, the Iranian lation had intermarried with the Arab conquerors.

Islam also penetrated Central Asia across the Transoxanian ier, with the Volga Bulgars becoming an island of Islamic civilisation unded by non-Muslim peoples. Along the Islamic world's southern frontiers, Hindu and Buddhist communities remained in long after their areas fell to Islamic conquerors such as Maḥmūd azna. In the Sind area of southern Pakistan, which had fallen to the centuries earlier, local Buddhists co-operated more closely with Muslim governors than did the Hindus. Islam's African frontiers less well documented. Here the East African seaports fell from bāsid control when Oman (in Arabia itself) seceded from the phate in the 9th century.

Things were far more volatile in the Mediterranean. The Aghlabid asty which ruled Ifrîqiya (Tunisia and neighbouring provinces) ed to the sea to confront a Byzantine maritime threat and to provide outlet for turbulent religious warriors. The resulting period of Islamic in Sicily was culturally and artistically brilliant, but Muslims ained a minority until the Norman Christian reconquest in the 11th ury. North African Islam then suffered a serious blow in the 11th ury with the westward migration of the Banu Hilāl and Banu Sulaym uin tribes who had been expelled from Fāṭimid Egypt, their arrival pting local agriculture and trade.

RECRUITMENT

A

B

C

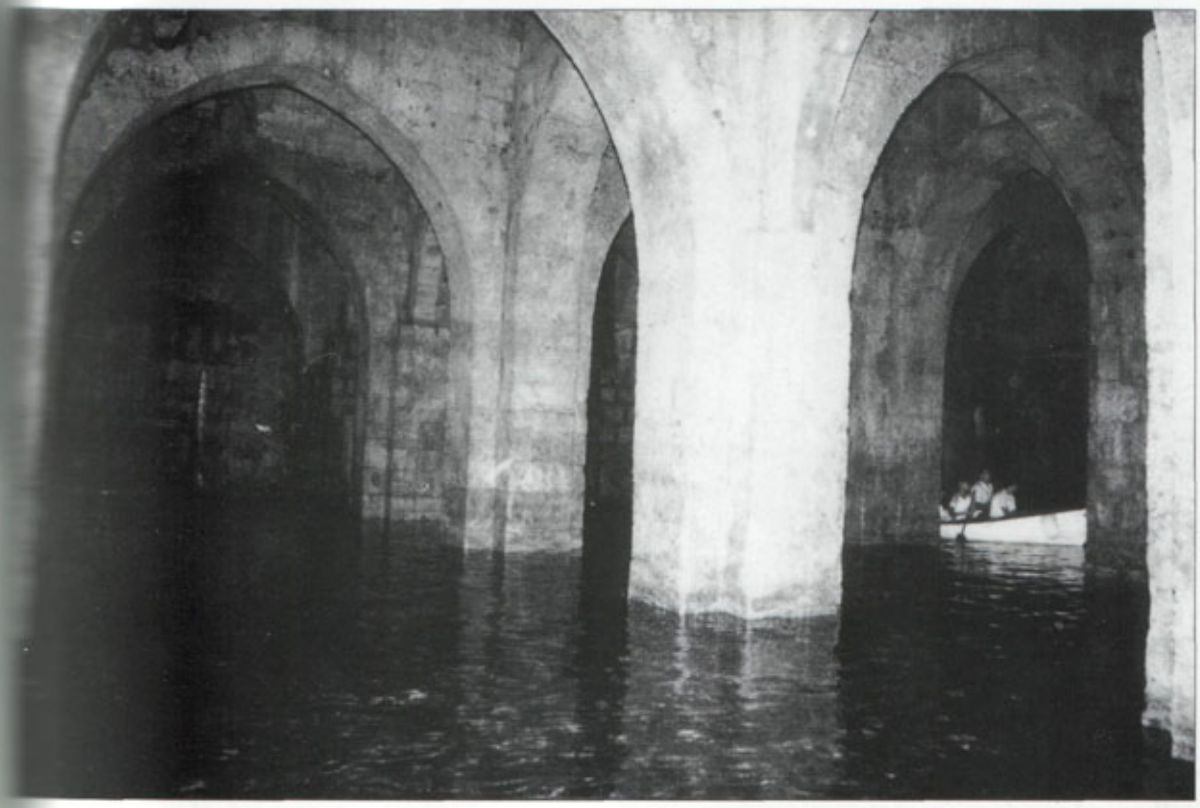
Carved ivory chesspieces: A – Cavalry fighting around a war-elephant with a seated prince and his guards, probably from Sind 9th century (Bib. Nat. Cabinet des Médailles, inv. 311, Paris); B and C – Chess-knights from Iran, 10th-11th centuries (Met. Museum of Art, inv. 07.228.70 and 1974.207, New York).

Men were recruited to most Islamic armies on the basis of ethnic origin whether they arrived as free men or slaves. Professional soldiers tended to come from the geographical margins of Islamic society. Their supposed simplicity and courage was admired by the sophisticated élites of Islam's urban civilisation, where the bulk of Islamic society did not provide professional recruits. Instead, they provided the civilian élites. The lure of wealth and promotion even led men from beyond Islam's frontiers to volunteer as *ghulāms* or *mamlûks* – soldiers of slave origin. There were even cases of voluntary castration since a eunuch's prospects were brighter – at least in career terms.

Again, the local situation varied. In Iran and Transoxania the Ṣaffārids (867-903) may have been unusual in relying on volunteers drawn from *ghāzī* religious enthusiasts, old soldiers, runaway peasants or free men looking for advancement. They were stiffened by a small number of *ghulāms*, mostly non-Muslim prisoners-of-war who had converted to Islam. The rival Sāmānid dynasty (874-999) preferred to recruit Persian-speaking Iranians, though they too began recruiting *ghulāms* of Turkish origin. The subsequent Ghaznavid dynasty built upon these existing systems to develop a notably successful military structure with which they conquered much of northern India.

The collapse of 'Abbāsid authority in Syria and the Jazîra resulted in an assortment of petty dynasties: the 'Uqaylids of Mosul (996-1096) who largely relied on Arab tribal followers, whereas their Marwānids of Diyarbakir relied on Kurdish tribesmen. Most of these small dynasties also enlisted foreign professionals and, when they could afford it, a tiny élite of slave-recruited *ghulāms*.

In Egypt, as in most other parts of the 'Abbāsid Caliphate, resident Arab militias had been removed from the *dîwān*, the military lists of regularly paid professionals, in the early 9th century. Thereafter, most professional soldiers were of Berber, Turkish, Persian Daylami, bedouin Arab, Greek, Balkan Slav, Mediterranean or African background. Egypt was rich, but rivalry with other Islamic states often hampered the flow of Turks, the preferred recruits. As a result men of local Egyptian origin such as those known as *mawālîs*, occasionally played a leading military role. The Fāṭimid dynasty of Shia Caliphs seized Egypt in 969, their first powerbase being in North Africa. Hence the original Fāṭimid army was of Berber North African origin, but the Fāṭimids' loss of North Africa and the relative military backwardness of these Berbers meant that they largely disappeared from the Egyptian army by the late 11th century. In North Africa itself, the Aghlabids (800-909) had their power base in Tunisia and never seem to have been short of good soldiers and marines. The Sāmānids, though they were supporters of the 'Abbāsid Caliphs, creamed off the best Turkish slaves and reduced the flow of *ghulāms* to Iraq to a trickle. The Zîrids of Tunisia (972-1148) also limited the number of Berbers seeking employment in Fāṭimid Egypt.



Subterranean water-storage cistern at Ramlah, Palestine 789. (Author's photograph)

Turks of slave origin came to be regarded as the best soldiers in parts of the Islamic world, although in reality many of those called 'Turks' in written sources were not ethnically or even linguistically Turkish. Many *ghulāms* from Islam's north-eastern frontier were Iranian speaking Transoxanians who would today be called Tajiks. Though remaining the property of their masters until manumitted, these *ghulāms* were so important that they were treated well. Loss of the *ghulāms*' loyalty was a very real problem for any ruler, and could result from inadequate pay and insulting treatment. Homosexuality flourished in such an environment and was widely accepted in Persia, though not in Arab areas, and this also caused problems of jealousy and cruelty. During the 10th century the *ghulām* system spread beyond Iran and Iraq even to subordinate Christian states such as Georgia and Armenia. Here, however, some of those graced with the title of *ghulām* were mere mercenaries of pagan Russian or Viking origin.

Transoxania remained the main area for assembling the slaves who would become *ghulāms*, with Samarkand as the main market. A few careers were recorded in detail. One man, for example, called Alptegin, became commander of a mixed regiment of Turkish *ghulām* cavalry and Samani freeborn infantry, but was defeated in one of Iraq's civil wars and so took his men to Syria in 974. There they operated as a band of freebooters before being enlisted by the Fāṭimid Caliph. Another Fatimid officer named Anushtegin was probably a Transoxanian Iranian rather than a Turk. He was captured around Khuttal, taken to Kashgar for sale, escaped and went to Bukhara where he may have surrendered himself voluntarily before being taken via Baghdad to Damascus. There

Ivory plaque showing an infantryman with a mail shirt, a large round shield and two double-ended javelins, probably from Islamic Sicily, 11th century. (Museum für Islamische Kunst, inv. nr. K. 3101, Staatliche Museen, Berlin)

he was sold in 1009 at the age of 20 to a Fāṭimi officer called Dizbar. Anushtegin adopted the name al-Dizbarî and for three years held a useful but unexciting administrative position before being given to the Fāṭimid Caliph al-Ḥakim as a gift. In the Caliph's palace Anushtegin al-Dizbarî received a complete education before becoming an officer in al-Ḥakim's army. He served in Syria and Egypt, crushed a bedouin revolt and was made governor of Ba'albek where he purchased his own *ghulāms*. He was made governor of Palestine in 1023 before being sent to deal with an uprising in Aleppo. Feeling threatened by political intrigues, he proclaimed his independence, but was forced out by loyalist troops and died in 1042, the same year that, thousands of miles away in western Europe, Edward the Confessor became king of England.

Slave soldiers of other origins had only localised impact. Indians, for example, only seem to have been found in the eastern provinces. Sometimes the precise origins of European slave troops is unclear, since all tended to be called *Rûm*, 'Romans', or *Saqāliba*, 'Slavs' by Muslim chroniclers. One such man, called Labîb the Devout, became an infantry soldier then married his former master's widow. Bitten by a snake and paralysed for a while, Labîb recovered, shaved off his 'military moustache' and became a religious ascetic. The *Saqāliba* initially consisted of Slavs and Ugrians from the pagan regions of eastern Europe and the Balkans, but only became militarily significant under the Aghlabids in Tunisia, the Fāṭimids of Egypt and in Islamic Sicily.

A more abundant source of military manpower for Egypt and North Africa was black Africa. The importance of such African troops, often called '*abîd* rather than *ghulāms*, has been neglected. Though their impact was localised it was important. Substantial numbers of black troops were seen in Egypt from the early 9th century and, like those who served in Aghlabid armies, were generally known as *Sûdānîs*, renowned for their obedience. The Fāṭimid army relied on them to a substantial extent following the move from Tunisia to Egypt, and they formed half the army under the Caliph al-Hakim (996-1020). Men known as *zanj* may largely have been freeborn African volunteers.

By the 10th and 11th centuries thousands of free Turkish mercenaries were drifting south in search of military employment. Some came from pagan tribes who converted in order to be accepted, while others came from tribes who already lived within the Islamic borders, but as yet the only dynasty which depended entirely on Turkish troops was the Turkish Qarakhānids.

As the 'Abbāsid Caliphate fragmented, Arab troops who had previously been deleted from the official military registers rose to prominence once again within Arab-speaking areas. *Amṣār* garrisons who had formed themselves into local militias or religiously motivated

...eers, now regained their place as registered, ...d troops. Bedouin support also remained ...f a government wanted to maintain control ...es like Syria or Palestine. As a result, most ...s of the population in northern Syria and ...ira were militarised by the end of the 11th ...y. Arab-speaking troops and naval marines ...ly played a major role in Egypt and North ... But to confuse matters, many Arab-...g troops were lumped together with the ... African Berbers by eastern chroniclers as ...is, or 'Westerners'. Tribal Arab troops ...ed to Egyptian army lists in the later ...ntury, and the bedouin slowly settled down ... landowning aristocracy whose military ...ance reflected their changing political ..., wealth and prestige.

Iranian-speaking Persians, Daylamis, ...s and Tajiks had a major military impact in ...th to 11th centuries, as the power of the ...ids (820-872) and Sāmānids (892-999) was ... upon the indigenous minor aristocracy of ..., while the second most important group ... Ghaznavid (962-1186) army were Iranians. ... most renowned were Daylami infantry, ...tain folk from northern Iran. Their profes-... or mercenary élite served as mobile ...nted infantry riding mules or camels, their ...cteristic weapon being the *zûpîn* double-... spear which could also be used as a javelin. ... once they had become an established élite, ... Daylamis attracted others into their ranks, ...ding a young man from 10th century Ahwaz ..., having squandered his inheritance on wine ... music, befriended the Daylamis, learned their ..., and used his remaining money to buy two ..., a pair of horses, a set of javelin, armour ... other necessary kit. He then dressed his hair ... Daylami fashion, ate garlic to give himself bad ...th and joined the garrison of Basra.

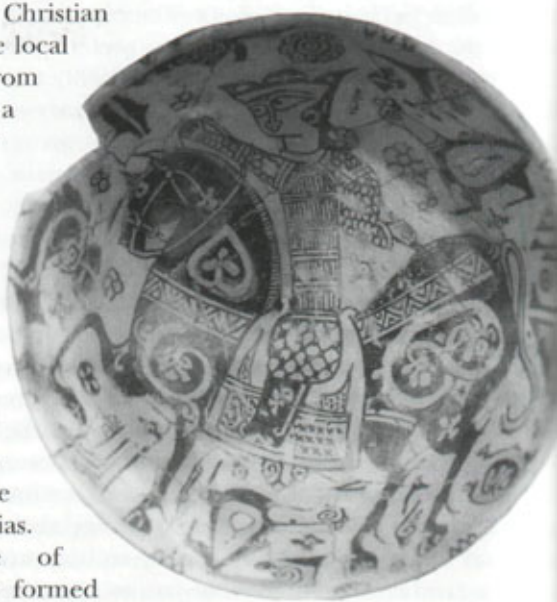
Other ethnic groups had a much more ...ised impact. Hindu and Buddhist Indians, for ...mple, were enlisted by the Ghaznavids. Brutal ...ntine suppression of the heretical Paulician community of eastern ...olia drove many into supporting local Muslim rulers, most notably ... frontier Amîr of Malatya. Armenian infantry archers and armoured ...alry were also found in Ḥamdānid (929-1003) and Mirdāsid ...23-1079) forces in northern Syria, while others travelled further ...d for work, particularly to Egypt where their importance increased ...siderably in the 11th century. Other Christian mercenaries were few ... number, though Fāṭimid forces included some hired soldiers from ... and western Europe.

TOP **Vaulted audience chamber in the fortress-palace of Ajidabya, Libya, built for the Fāṭimid Caliph al-Mu'izz in 972. (Libyan Ministry of Antiquities photograph)**

ABOVE **Wall-painting from Nīshāpûr, 10th century Iranian. (Archaeological Museum, Tehran)**

Kurds only emerged as a significant military force in the 11th century, although other Kurdish cavalry had been recorded in Ghaznavid forces near the Indian frontier. Berber troops dominated North African armies and navies, though numerically, rather than in military prestige. Following the Fāṭimid conquest of Egypt, Berbers also predominated in Egyptian armies until the mid-11th century. The Islamic conquests in Sicily and southern Italy resulted in Italian, Lombard and Greek converts becoming Muslim soldiers. Black African infantry archers operating in 10th century Cilicia, called *Aethiopians* by their Byzantine foes, are unlikely to have come from what is now Ethiopia. The black *zanj* in the Fāṭimid army included free mercenaries who did not necessarily originate in the land of Zanj, the Arab name for much of the East African coast. An ancient population also existed along the coast of Oman before becoming Arabised around the 10th century. These Bayāsirah traditionally came from Sind and were recruited as sailors or marines.

Christian Arabs still formed a majority in Syria, and one Mirdāsid ruler of 11th century Aleppo employed a Christian army commander named Tādhrus Ibn al-Ḥasan. The local Jewish population could also help defend Aleppo from external attack. Indigenous Copts had long played a role in Egyptian navies, but the late 9th century Ṭūlūnid ruler, Khumārawayh, also attempted to raise a bodyguard from the peasants of the Nile Delta. Part-time militias played a major role in medieval Islamic warfare. The terminology of such militias changed over the centuries. The term *aḥdāth* reappeared in the 10th century when it applied to a militia, as distinct from the governor's *shurṭah*, garrison or police. The term *shurṭah* came to mean a police force recruited from the urban poor. Several Syrian cities had their own *ma'ûna* militia. In Egypt, meanwhile, *aḥdāth* seems to have meant younger garrison soldiers, rather than militias. Religious volunteers had been a feature of Islamic armies since the earliest days. Some now formed fundamentalist rebel armies fighting existing Islamic governments. The *Khāriji* and *Qarmaṭî* movements came under this category. Other frontier irregulars were the *sa'ālīks* who consisted of assorted adventurers who gathered around official and unofficial leaders.

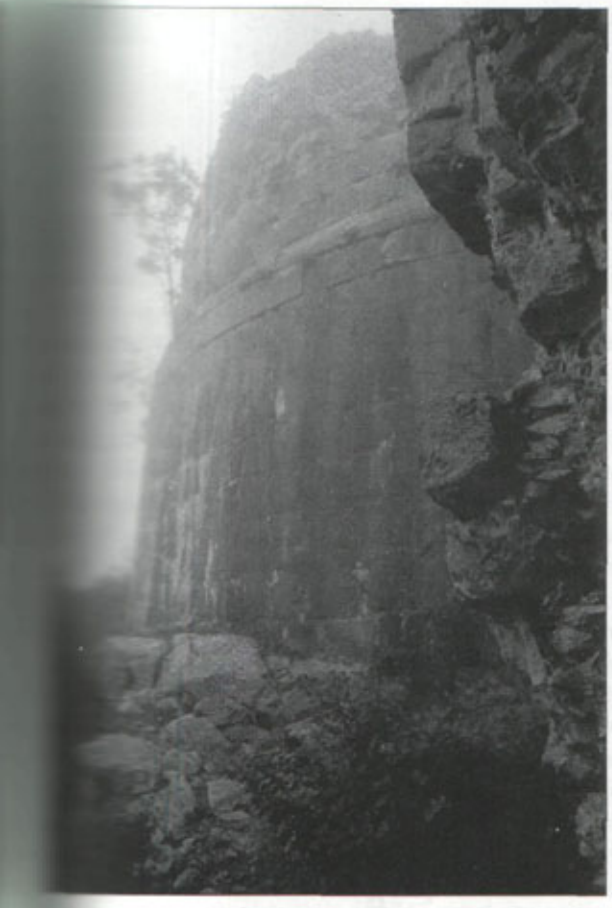


TOP **Gabri-ware jug showing a foot soldier with a war-axe, Iranian 9th-10th centuries. (Louvre, inv. 7242, Paris. Photo R.M.N.)**

ABOVE **Ceramic from 9th-10th century Nīshāpūr showing a cavalryman with a lamellar cuirass over a long-sleeved mail shirt. (Museum of Islamic Arts, Sharjah, UAE)**

By the 9th century 'Abbāsid Iraq was importing horses from Central Asia, while Arabia and Somalia were exporting horses to India. The price of mounts was varied and volatile, with huge differentials between pack horses and the best cavalry mounts. Wealthier successor states attempted to copy the 'Abbāsid *khān al-khayl*, or state stabling system, but again in a more modest way. The 'Abbāsid stables were centred upon a huge complex with a large staff and substantial administration, and only the wealthy Fāṭimid dynasty seemed able to maintain anything on this scale. Camels were vital beasts of burden and were much cheaper than horses, single-humped dromedaries and two-humped Bactrians being used in different regions.

ORGANISATION



...sive tower flanking the ... entrance to the castle of ...iyah, first built by the ... Hārūn al-Rashīd and ...gthened by Sayf al-Dawla ... 10th century. (Author's ...graph)

The *'arḍ*, or military review, played a major role in the organisation, training and equipment of medieval Islamic armies. It gave commanders a chance to test their abilities and enabled a ruler to assess the size and competence of their forces. The payment of Muslim soldiers also rose steadily, along with increasing professionalisation and a reduction in numbers. Cavalry were normally paid twice or three times as much as infantry, since a horseman had his animal and its harness to maintain. Guard regiments received even more, while pay differentials between soldiers, officers and commanders could be staggering.

The early 'Abbāsid military structure was, in fact, exceptionally expensive. But economic contraction from the 9th century onwards obliged the later 'Abbāsids and successor states to find other ways of paying their armies, initially through tax farming by military commanders and eventually through the *iqtā'* system where a certain piece of territory was allocated to a specific commander so that he could use its revenues to pay himself and his followers.

The payment of troops became the main consideration for governments in almost every corner of the Islamic world. The main variation was in successor states where the dynasty depended on tribal troops. Here the ruler's primary concern might be the provision of grazing for the flocks of such nomadic tribes. Nevertheless, cash remained vital for all Islamic successor states and where it could not be raised by taxation, it would be raised by tribute from local towns. In fact, towns within amorphous tribal states enjoyed increasing autonomy, particularly when rulers tended to move around with their main tribal supporters. The result was a century-and-a-half of cultural and scientific brilliance within a commonwealth of Islamic statelets.

Each successor state also developed its own characteristic administration, although the 'Abbāsids remained the model. Military and civilian élites were separated where possible, with military families concentrated in distinct suburbs. The traditional 'Abbāsid officer structure, where an *amîr* supposedly led 10,000 men, a *qā'id* 1,000, a *naqîb* 100, and an *'arîf* ten, remained the ideal, but in reality the old 'Abbāsid army had been disbanded by the new *Amîr al-Umāra* in 936. Instead, the new army consisted of regiments under virtually autonomous *amîrs*, or commanders. Patterns of loyalty were different to those seen in the primitive states of early medieval Europe. *Iṣṭinā'*, or the allegiance of a slave-recruited *ghulām* unit following the death of its original patron was a sensitive matter and was normally transferred to its own senior officer. This commander found employment for his regiment, while the younger soldiers were loyal to him rather than the state. Such regiments, though dominated by cavalry, sometimes had infantry closely associated

Gold medallion showing the Buwayhid prince 'Aḍud al-Dawla, late 10th century. (Freer Gallery of Art, Washington)

with them. Specialist technical troops also existed, though it is diffi to determine how they fitted into the system. For example, *manjaniq* mangonel-operators, were found within most cities and fortresses, led an *amîr* and recruited from experienced soldiers. The same may ha been the case with *nafāṭûn*, fire troops. The famous 'Abbāsid fie hospital had declined, but existed in some of the better-equipped 11t century armies.

While 'Abbāsid traditions remained the ideal, local variatio emerged. In Iranian-speaking or influenced regions, pre-Islamic Persi military terms reappeared in the 9th to 11th centuries, such as *sālār* sipah-sālār, meaning commander, *ispahbadh*, army chief, and *sarha* junior officer. The short-lived Ṣaffārid dynasty (867-903) was s consciously Iranian, holding its military reviews during the *Nauru* Persian New Year. Drums summoned men to parade where they a their kit were inspected, each man being entered in the *dîwān* (lis according to physical description in a manner recalling military parad in pre-Islamic Sassanian Iran. The rival Sāmānids (874-999) were equa conscious of their Iranian identity, though in their last years a Turki general took control of the state and adopted the high-flown Arabic ti of *amîr al-umāra' al-mu'ayyad min al-samā'* – 'Commander of Commande with Heavenly Backing'.

In western Iran and Iraq, the Buwayhids built their power up Daylami mountain warriors as well as a corps of Turkish *ghulāms*. It w probably tension between these two parts which necessitated separa reviews. In an attempt to bind their heterogeneous army together, t Buwayhids used complex chains of oaths of mutual loyalty and suppo between leading officers and between officers and men. Away to the ea the Ghaznavids fielded a mixed army in which each ethnic group w generally commanded by an officer of its own origins. Ghaznavid *ghulāms* were led by the *Sālār-i Ghulāmān*, who was second in rank to t army commander himself, while at the other end of the scale t commander of a frontier *ribāṭ* fort was the lowest officer rank. T Qarakhānid state to the north was a collection of autonomous Turki fiefdoms, and its military administration was firmly based on Centr Asian tribal traditions.

In the Anatolian *thughûr*, or frontier regions, highly militarise towns had developed within agricultural areas inhabited by warli farming militias descended from earlier Arab troops. Tarsus was on such town, and shortly before it fell to the Byzantines in 965 it w described in detail by an Arab geographer. It had two walls, the out gates being covered in iron, while the inner gates were entirely of iro The large towers had *manjanîq*, beam-sling stone throwing machines, o top, and middle-sized towers had *'arrāda*, torsion-powered sto throwers. Small turrets were defended by men with crossbows, while t walls were manned by archers. Some towers were inhabited by loc residents or volunteers, while others were used as factories. Inside t city some barracks had resident armourers and blackmiths, or stabl with resident vets. Many were financed by religiously endowed prope rents here and in Syria. Raids were announced on Fridays in the ma mosque. Boys spread the message to muster at a particular gate, whe banners were given to unit commanders and infantry were attached cavalry regiments. Each group carried appropriate weapons, includi

Carved wooden panels which originally formed one of the doors to the Fāṭimid Caliph's Palace. (Museum of Islamic Art, Cairo)

...ows. One of the weaknesses of the mountainous Anatolian frontier ... was that many of its fortified cities were in isolated valleys rather ... a series of upland oases separated by mountains, which made mutual ...port difficult. Further south, in the fertile lands of northern Syria, the ... Islamic dynasties had greater military potential, but their main ...es were similarly vulnerable to Byzantine attack.

The Aghlabid dynasty of Ifrîqiya (800-909) relied upon the old ... resident garrisons whom they largely paid in cash. Nevertheless, it ... the Aghlabids who introduced the *iqtā'* system to Sicily following its ...uest. A comparable system was used by the Ṭûlûnids in Egypt ...905), who also built the new military cantonment of Qata'ā' just ... of the Fāṭimids' later palace-city of al-Qāhira (Cairo). Ṭûlûnid ...ps did not, however, remain in barracks all year, but went into the ... Delta to pasture their horses, the troops being billeted with Coptic ...ies. Another major Egyptian garrison centre was Alexandria, and ... units were spread along the coast.

The organisation of the Fāṭimid army (969-1171) is one of the best ...mented in Islamic history. The force which conquered Egypt for the ...mid Caliph may have numbered up to 100,000 men, but was later ...ced to a maximum of 25,000, up to 15,000 of whom were based i ...Cairo. The original army had been tribally organised, whereas the ... one was regimental, these reforms being part of a policy of ...lding a military structure based upon that of their 'Abbāsid ...ls. Fāṭimid ranking ...luded *amîrs* or *qā'ids* ... Class, which included ...îrs of the Necklace, ...îrs of the Silver Cane ... junior *amîrs* without ...es of office. The *amîr* ...yûsh was in command ... the vital Syrian garr-...ns, where most later ...imid wars were fought, ...ile the *isfahsalār* was ... charge of military cere-...onial. Special *dîwāns*, ... government depart-...ents included the *dîwān* ...-*jaysh* responsible for ...views. The *dîwān al-iqtā'* ...ervised the increasingly

The small fort in al-Rabadah, a 10th century way-station on the strategic Darb Zubaydah road across Arabia from Iraq to Mecca and Medina.

A fully armoured soldier on a 10th century plate from Nīshāpūr. (Met. Museum of Art, inv. 66.176, New York)

important *iqtā'* system, and the *dīwān al-ra* was responsible for paying the troops eigh twelve times a year. There may also have bee fourth *dīwān* in charge of military pensions, all which seem to have been run by Christian cleri To make things more complicated, payme differed depending on whether the unit question was an élite regiment, a garrison for assimilated into a local population, the moveab garrison of a castle, or merely a semi-regular trib force. *Iqtās* were often associated with a specif number of peasants rather than a piece of lan and other *iqtās* consisted of marginal land on th desert fringe, allocated to tribal leaders in retur for help in war. Defence of the southern fro facing Nubia was largely delegated to the loc Kanz al-Dawla dynasty by the early 11th centur Like the Buwayhids, the Fāṭimids relied on system of patronage to cement military loyaltie An inadequate performance on the battlefield was to some degr balanced by amazing ceremonies back in Cairo, where military parade were used as a way of projecting Fāṭimid prestige. These were important that special arsenals were created for flags, tents, decorate weapons and horse harnesses, uniforms, musical instruments, books an Caliphal regalia, in addition to ordinary arsenals for arms, armou harness and food supplies.

The treatment of prisoners during this period is well documente It tended to be harsher in times of defeat than of victory, and the o were more likely to be killed than the young. Higher ranks were mo likely to be ransomed than lower, while those captured during na raids normally survived. Prisoner exchange systems across the Islami Byzantine frontier were highly organised, and released Muslim prisone were interrogated by the Master of the Frontier Post to weed out spi Naval captives were ransomed at selected places along the coast, such a Gaza, Mimas, Ascalon, Ashdud, Yubna, Jaffa and Arsuf in Palestine.

The city walls of Diyarbakir were rebuilt in the early 10th century. (Author's photograph)

WEAPONRY

Élite cavalry were ofte heavily armoured an used horse-armour; th subsequent willingness o Islamic cavalry to fig the First Crusade a close quarters suggests confidence in their ow armour. Talismans an amulets were also im ortant, particularly amon soldiers, since there wa widespread belief in ma

The Bāb al-Naṣr gate in Cairo, built in 1087. (Author's photograph)

This painted paper probably symbolised Turkish *ghulām* cavalry and Berber infantry in the 11th century Fāṭimid army. (Museum of Islamic Art, Cairo)

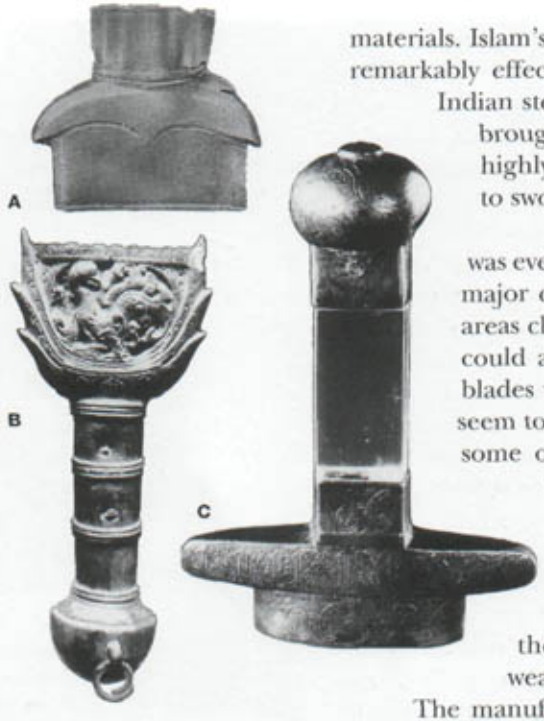
was itself divided into the 'good' and the , the lawful and the unlawful.

Naturally, there were regional variations ulting from local traditions and wealth. rāsānis from eastern Iran, for example, were d for mail hauberks, quilted or felt soft our for men and horses, arm defences which e still of laminated construction, light spears cavalry axes. Similar equipment has been d just beyond Islam's Central Asian frontier, that worn by neighbouring Muslim warriors is likely to have differed much. Pictorial sources m 10th and 11th century Iran and Transoxania me much more stylised, whereas written ces provide highly detailed information. For mple the huge *Shāhnāmah* poem written at the of the Sāmānid period indicates considerable inuity, including the use of horse-armour and armoured elephants.

Other sources show that Ghaznavid troops basically the same equipment, while their ian mercenaries were armed with javelins, ers, spears and bamboo rather than com- bows. Daylami infantry relied on swords, ins and larger axes, but also used bows with -guides to shoot short darts at opposing s. In Syria, Alptegin, the leader of a mer- army, wore a yellow fabric-covered mail-lined *kazāghand* and d a sword, and a long cavalry spear or a shorter *zûpîn* when on while his horse-armour, 'covered in mirrors', suggests a lamellar or construction.

According to Byzantine sources, some Fāṭimid infantry wore pink soft-armour, probably quilted. They carried long spears, shields as as a man and huge wooden bows. The Fāṭimids learned fast, ever, and made increasing use of horse-armour following their tunate experiences against Alptegin's s. By the 11th century the best Fāṭimid s were armed with hand-held crossbows before these became common in Europe. infantry carried assorted specialised staff pons for use in disciplined ranks against alry. Heavier weapons included *qaws al-lawlab*, frame-mounted crossbow, and the usual of stone-throwing devices. Fāṭimid armour uded the same items used in eastern regions, gh generally known by Arabic rather than ian names.

Trade in military equipment involved trade raw materials, especially as the main iron rces of the Islamic world lay either close to frontiers or beyond them. As a result gov- ts took a close interest in trade in strategic



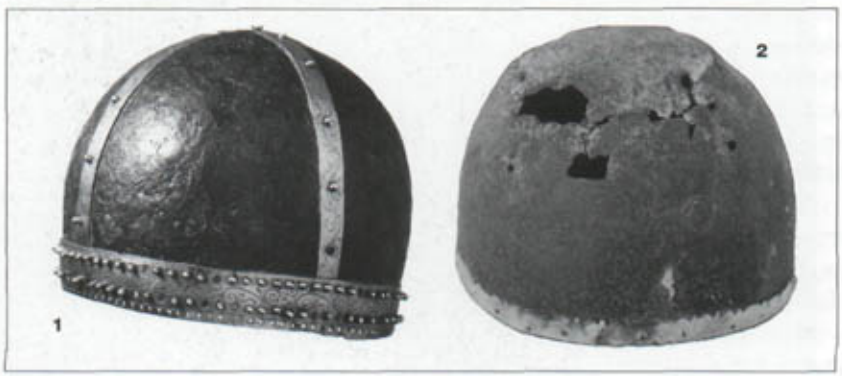
A – Iron sword-guard, 8th-9th centuries, from al-Rabadah (Dept. of Archaeology, King Saud University, Riyadh). B – Bronze sword-hilt from the Serçe Liman shipwreck, late 10th-early 11th centuries (Castle Museum, Bodrum). C – Pommel and quillons from a bronze sword-hilt, probably Egypt 9th-10th centuries (ex-Storm Rice Coll.).

materials. Islam's poverty in iron and timber was partially balanced by a remarkably effective pattern of long distance trade in raw materials. Indian steel, for example, was made of iron, some of which was brought from East Africa, Malaya and Indonesia. Ingots of highly regarded Indian crucible steel were then re-exported to swordsmiths over a vast area.

Long distance trade in finished weapons and harness was even more complex. Military equipment was made in most major cities, but larger scale production was concentrated in areas closer to sources of raw materials. Good quality weapons could also pass through several hands as booty. Indian steel blades were still sought after, though by the 9th century they seem to have taken second place to those from the Rhineland, some of which were exported via the isolated Islamic state of Volga Bulgar in Russia. Italian merchants brought arms, armour and basic raw materials to Egypt despite consistent Papal bans on this trade. The distribution of military equipment within Islamic states was largely controlled by governments from their own arsenals. Wealthy governments also sent weaponry to less well equipped allies.

The manufacturing methods used by Islamic armourers seem to have been remarkably sophisticated and modern. Mild steel was increasingly used for sword-blades and spearheads, and there were several recognised ways of making such steel. So-called Damascene steel was made from ingots containing a great deal of cementite (iron carbide) cast at very high temperature. The result was hard but brittle, and the pattern on the finished blade was achieved by breaking up this network of cementite with repeated hammering and bending at fairly low temperature. Muslim swordsmiths used the colour of the metal as their temperature guide, while European smiths, lacking experience, normally forged at higher temperatures which made high-carbon steel crumble. Other evidence suggests that craftsmen involved in the Islamic arms industry were divided into highly specialised groups. Hence the manufacture of a complete sword, scabbard and swordbelt involved numerous men doing one small part each. Western European armourers also played a role in the Egyptian arms industry during the Fāṭimid period.

Bronze was used to a much greater extent than in Europe, presumably because of the shortage of iron in the Islamic world, with sword hilts, scabbard mounts and items of horse harness being made in sand or clay moulds shaped from bronze matrices. Gluing layers of hardened leather was a natural way of making effective shields, but the use of leather to make helmet, lamellar and splinted armour again suggests a shortage of iron in the region.



1 – Islamic helmet from Chamosen, 9th-10th centuries, with decorative strips across the bowl. (Schweizerisches Landesmuseum, inv. 40514, Zurich). 2 – An iron helmet very similar to the Chamosen example. (Islamic Museum, Kayrawan).

Swords ranged from broad, non-tapering and almost blunt-ended infantry weapons, to slender curving cavalry sabres adopted from the Turkish steppe peoples of Central Asia. The appearance of the first real sabres in Islamic armies remains unclear, but a few such weapons might have been seen in eastern Iran by the late 9th century. The earliest term for curved sabres was probably *qarājûlīya*, a word possibly derived from the Turkish word *kilij*, meaning 'sword'. A sabre with an Arabic inscription has also been found in a 9th-10th century archaeological site near Mongolia, while another with an 11th century Armenian inscription was found in northern Russia. Its blade was hammer-welded rather than forged from steel, and is thought to have been made by a Muslim craftsman in the Caucasus. The large dagger used by many Muslim soldiers was more like a short sword for use in close combat. Some from 10th century Yemen were said to have hilts partly made of coloured stone or crystal. A different form of dagger was the 11th century Berber *yāfrût*, which was a slender thrusting weapon.

Spears were so commonplace that they rarely attracted detailed descriptions. The most detailed information on spears and staff weapons comes from al-Tarsusi who wrote for Saladin in the 12th century but used his work on earlier Fāṭimid traditions. He stated that the *qunīyah* was a standard cavalry weapon which could be used in the same couched manner as Crusader knights. The *ḍarîyah* or *ṣarîyah* was an infantry pike around four metres long, one third of which was the blade and its long protective socket. The *ṣabarbahah* was two-and-a-half metres long, with a blade approximately 17cms wide and 50cms long and was again a form of infantry pole-arm. The most distinctive javelin was the double-edged *zûpîn* of Sudanese foot soldiers, whereas the *khisht* used by Arab bedouin infantry was a lighter javelin. The *sanjīyah* or *furanjīyah* was another obscure javelin or spear used by Fāṭimid armies. Its name might indicate an *ifranji*, or 'European', origin which would suggest that it had European-style wings or lugs below the blade.

The Baghdad Gate in Raqqa, the Jazira area of eastern Syria. (Author's photograph)

Maces and axes were widely used as ceremonial court or parade weapons, coming in a variety of plain or decorated forms, mostly of iron but sometimes of bronze. The most distinctive was the infantryman's *laṭṭ*, which had an elongated head designed to strike the legs of cavalry horses. The *nāchakh*, an axe with a half-moon blade, was described as suitable for cavalry fighting infantry. A more common cavalry axe was the *ṭabarzîn*, or 'battle-axe', with a relatively small head and a spike or hammer at the back.

Most bows were of composite construction. The angled composite bow seems to have been preferred until the 11th century when it was gradually replaced by the smoothly recurved Turkish bow. The angled ears served as levers which made the bow easier to draw, but being short they stored no energy and indeed wasted

The turban, weaponry and saddle of St. Eustace on the lower panel point to the 9th-10th century and powerful influence from neighbouring Islamic Iran. (Stone altar screen from Tsebelda Church, S.N. Djanashiya State Museum, Tblisi)

A – Early medieval bronze spearhead from southern Jordan. (Islamic Museum, Mazar)
B – Iron knife with wooden grip from Qaṣr Ibrim, Nubian 8th-9th century. (British Museum, inv.

energy when the bow was released. The smo recurved Turkish form was normally thicker, sho and capable of storing more energy, but demand greater strength from the man using the bow.

Various shooting aids were used, most importa a Persian form of semi-gauntlet called *angushtvānah*, or in Arabic *kustubān*, which protec between two and four fingers. The *qaws al-bunduq* 'pellet bow', was a hunting weapon to stun bir It was used for other amusements, such as when 'sponger' at the 'Abbāsid court shot at the bottom an unfortunate servant who had been ordered kneel on the floor.

The *ḥusbān*, or 'arrow-guide', has sometimes be confused with early references to crossbows. The fi reference to proper hand-held crossbows, called *qaw al-rijl* or 'foot bows', was among 'Abbāsid infantry the second half of the 9th century. The fram mounted type were used by 'Abbāsid soldiers in op battle in the late 9th century, while large and small crossbows were us in the Islamic Middle East during the 10th century. Among them th original *jarkh* or *charkh* was spanned by a windlass and shot arrows th size of javelins. The crossbow used by 11th century Fāṭimid Egypti marines incorporated an early Arab form of bow and was power enough to shoot small bottles of *naft*, or 'Greek Fire'.

Other siege weapons included the *burj*, a movable wooden tow the *dubbābah*, a shed-like structure rolled forward to protect sappe *naqb*, or mining and excavating tunnels at an angle to the enemy's w so that the target remained unclear, and *kabsh* or *sinnawr*, rams. Ston throwing machines were designed to break parapets and clear the wall enemy troops. They included the *'arrāda* powered by twisted ropes a mounted on a chassis; the *ziyār* with two smaller beams acting like th arms of a crossbow; the simple man-powered beamsling *manjaniq* mangonel; and the *rutîlah*, which may have thrown several smaller ston like grape-shot.

Defenders countered by trying to destroy the enemy's siege wo or by hurling *naft* ('Greek Fire') at his wooden engines. Fire weapo were highly developed in Islamic armies during this period, sin Muslim engineers and chemists inherited the technology of Gree Rome, the Byzantines and the accumulated knowledge of Alexandr They were also part of a civilisation which encouraged intellectu curiosity and experimentation, as well as being in contact with Chi where gunpowder itself would soon be invented. Throughout th 9th century *naft* became increasingly common in ever more terrifyi variations. According to a 10th century poem, the blazing liquid w propelled through a system of copper pipes and pistons involving crank or lever. The jet was ignited by a cotton wad impregnated wi sulphur and coated with wax to produce a jet of fire 'as long as a lan Muslim chemists already knew the secret of distillation, and some probably included petroleum as well as the new ingredient of saltpe though the resulting semi-explosive mixture could only be used

In contrast, the armour worn by Islamic changed little, though the ability to forge iron helmets became widespread from century onwards. Helmets made of two or pieces of iron, with or without a reinforcing continued to be used, but the development fluted helmet whose corrugated surface greater strength without increased stemmed from the ability to forge helmets and probably first appeared in Islamic Middle East in the 11th century. wise, a warrior protected his neck and with a hood-like mail coif or a mail suspended from the rim of his helmet.

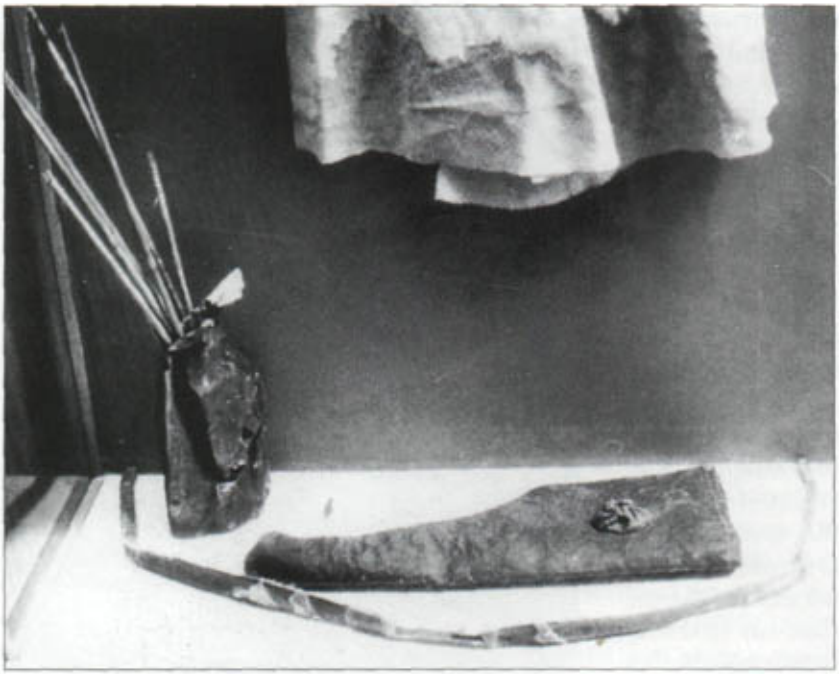
The traditional mail hauberk, called a *dir'* in and a *zirih* in Persian, remained the main of body armour, while the fabric-covered integrally padded *kazāghand* spread westward its origins in Iran or Transoxania during the century. Being shaped like an ordinary coat, it is practically unidentifiable in sources. The lamellar *jawshan* cuirass was from the east where it had been most on. It could be made of iron, horn or ened leather, was usually laced with gut and at the side of the body. *Jawshans* from were heavier than those from Byzantium, and weight could be a problem for a 10th cavalryman. Soft armours were widespread for climatic and mic reasons since they were cheaper than metal or leather ces. The *shi'ār*, for example, may have been a form of soft armour under a mail hauberk.

A fragment of 11th-12th century Egyptian painted paper showing one of a pair of cavalrymen shaking hands above the carnage of battle. (Keir Coll. I.8, London)

Limb defences seem to have largely been abandoned during the century, perhaps because a greater variety of shields came into use, ding a new flat-based but essentially tall kite-shaped mantlet called *ūriyāh*. This was used by ranks of infantry against arrows and its suggests a European Genoese origin. The *lamṭ* was another large distinctive shield made of layers of leather which originated among Saharan Berbers.

Bargustuwān horse armour could be heavy and was used by a small of heavy cavalry in Transoxania and Iran. The Ghaznavids of anistan and north-west India do not seem to have used much horse- our, presumably for climatic reasons, since the problem of se-armour was not its weight, but that it caused the animal to heat. In 10th century Syria the best Ḥamdānid *ghulām* cavalry rode es with metallic armour perhaps captured from their Byzantine foes. quilted or felt horse-armour was used by some 11th century mid heavy cavalry, with iron horse-armour for the élite few. An iron d-piece for a war-horse excavated at Soba, capital of the Nubian gdom of Alwa, was probably made in Egypt.

Strong Central Asian influence can be seen in surviving pieces of mic horse-harness from Iran, while decorative horse-collars, again of



A full set of archery equipment from an 8th-9th century grave at Moshchevaya Balka on the northern slopes of the Caucasus Mountains. (Hermitage, St. Petersburg)

Central Asian inspir
were soon to be found
far away as North Afr
The most common form
cavalry saddle was simila
of Central Asian orig
from Khwārazm, a reg
south of the Aral Sea. It
broad and somewhat
with a slightly rais
pommel, two girths and
breast strap.

COSTUME AND UNIFORMS

Islamic costume was m
functional than form
Differentiation was ma
by colour, design and quality of fabric, but since medieval Islamic soci
was fluid rather than class-based, those of lower rank constantly tried
imitate the higher, while the higher constantly reinvented themselves
developing new fashions. During the 9th to 11th centuries the politi
and military élites adopted Iranian rather than the older Arab fashio
In southern Arabia, however, archaic pre-Islamic styles persisted, a
seemed close to the traditional costume of India.

Various fabrics were available. Cotton had been grown in t
Middle East since pre-Islamic times, linen was produced in Egypt, S
and Tunisia, and the manufacture of silk increased considerably. W
was, of course, universal. Surviving textiles show considerable variet
dyeing and embroidery, though the dyes themselves remained extrem
expensive. The most distinctive form of Islamic costume decoration w
the *ṭirāz*, or inscription worn on the sleeve. It originally had a co
function, and the wording of a *ṭirāz* normally consisted of the *B'ism*
or Invocation of God followed by blessings for the Caliph and some ti
while the surrounding decoration could range from the magnificen
the rudimentary.

Fashion frowned upon mixing different textures of fabrics a
strongly contrasting colours, as subtlety was highly esteemed. Ot
people used fashion in a different way by wearing the simple wool
garments associated with a religious life and with 'fighting for the Fa
Some schools of religious law frowned on silk which was reserved f
Paradise, but almost all agreed that it could be worn by soldiers a
provided some protection against the infection of wounds. The Isla
attitude to colour maintained that white was best for men and for bur
except for those who fell in battle since they could be buried as they f
Green was associated with Paradise, descendants of the Prop
Muhammad and eventually with Islam itself. Black was thought
protect the wearer from the 'evil eye', or envy, and was the colou

Clothing from an 8th-9th century grave at Moshchevaya Balka. (Hermitage, St. Petersburg)

mourning, while turquoise also protected from the 'evil eye'. Red was the colour of Satan, but was also associated with love and war, being suitable for women or military men. Yellow became associated with a pleasure-seeking lifestyle, though yellow turbans were worn by the descendants of Muhammad's earlier helpers.

Headgear could indicate a multitude of things. The most common forms were a cap and a turban which could be wound in different ways. The *qalansuwah* was a relatively stiff hat of cloth or fur, sometimes quilted, while the *qalansuwah tawîla* ('long *qalansuwah*') was taller, and sometimes nicknamed a *dannîya* because it looked like a *dann* wine jar. The *qalansuwah shāshîyah*, or simply *shāshîyah*, was a lower cap originating in Transoxania and widely worn by soldiers, sometimes as padding beneath a helmet.

Ceremonial military dress was more common than were real uniforms. It could simply be a matter of magnificence, as with cloth-of-gold turbans, or it could involve jewellery. The 'robes of honour' given to successful military leaders or officers could similarly include turbans, jewelled *ṭawq* necklaces and decorated horse-harness as well as robes. The actual robe of honour was usually a traditional Arab *durrā'a* with

A horseman playing polo on 9th-10th century ceramics from Nīshāpūr. (Museum für Kunst und Gewerbe, inv. nr. 1956, 153, Hamburg)

braiding and buttons of gold or pearl. Generally speaking, however, the old-fashioned loose-fitting Arab *durrā'a* was replaced by the tighter short-sleeved Persian *qabā'* among military men in the 9th century. Elaborate horse-harnesses were another mark of superior military status. Arab fashions were relegated to non-élite or frontier troops of Arab origin in those places where a successor state made a conscious statement of its Arab origins. Other military garments were the light and almost transparent summer *ghilāla*, the short-sleeved *khaftān* which opened fully down the front, the *lubbādah* or *khayz* short linen tunic and the *sirwīl* trousers which were the most characteristic item of military dress.

Under the Caliph Mutawakkil (847-861) soldiers were supposed to wear light brown virtually camouflaged coats, and black, the official colour to indicate allegiance to the 'Abbāsid dynasty. A detailed description of 'Abbāsid guard units parading for a Byzantine ambassador in 917 mentions *daraqah* leather or *turs* wooden shields, old-fashioned brocade *durrā'a* coats, *khūdh* helmets, pointed *qalansuwah* hats over close-fitting *waqāyāt* caps which may have served as padding beneath their helmets, *qilādah* collars of rank, *qaws* bows and *tabarzîn* cavalry axes.

In eastern Iran Ghaznavid *ghulāms* paraded in 1031/2 in brocade *qabā'* coats, half having silvered maces and belts with their turbans shaped like two horns, the other half wearing feathered hats. From their belts hung a quiver, sword and bowcase, while in their hands they held bows and three arrows. Three hundred special guardsmen had fine costume with gilded belts and maces, while 60 carried maces encrusted with jewels. In Egypt the Ṭūlūnid ruler Khumārawayh (883-895) showed his allegiance to the 'Abbāsid Caliph by dressing his bodyguard in black coats with turbans and recruiting them from black Africans. The Fāṭimid Caliphate did not use the black associated with its 'Abbāsid rivals, but encouraged a fashion for cloth-of-gold.

TACTICS

In open battle 'Abbāsid and Fāṭimid armies relied on armoured cavalry to win, lighter cavalry to harass the enemy, and infantry to provide a firm base from which cavalry could operate, though in siege warfare infantry naturally played a dominant role. In such a literate and cultured civilisation, plenty of books were written for both rulers and commanders, these *Naṣīḥāt al-Mulūk* or 'Advice for Rulers' often dealing with military matters. They were strongly influenced by earlier Arab-Islamic, Sassanian Iranian, Hindu or Buddhist Indian theories, and by Greek military texts.

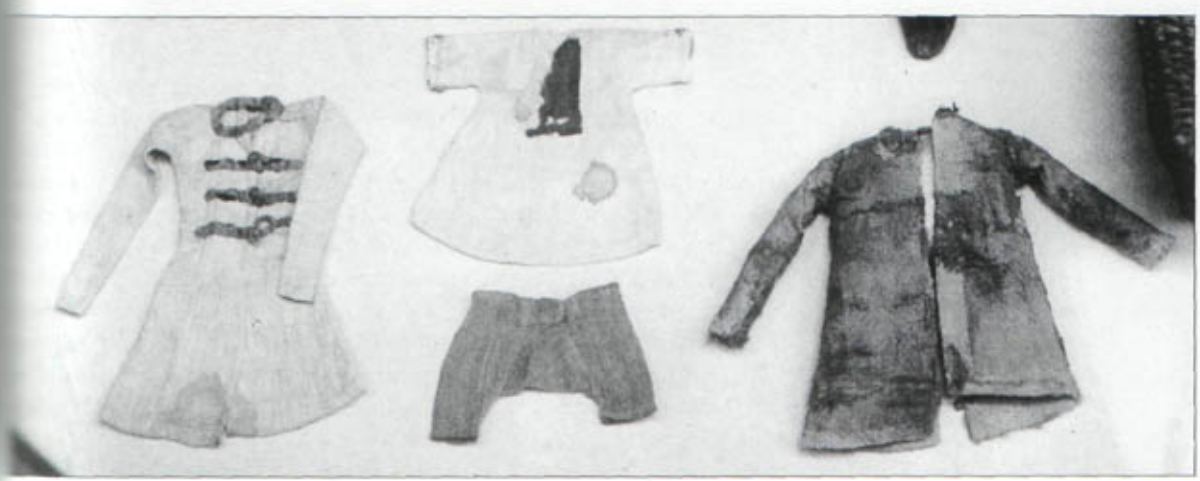
Few military texts survive intact, but a great deal is embedded in later Arabic and Persian works. The major emphasis was on caution, fortification, reconnaissance, communications, espionage or intelligence, the use of deception, ruse and ambush. The need for a commander to

sult his colleagues and military experts, to maintain the loyalty and cipline of his troops, were fully recognised. Different tactics were ployed depending on whether the enemy was strong or weak, and the ection of suitable camp sites in hostile territory was a major concern. as mobilisation, review and the protection of a baggage train. ding by day and night was a favourite strategy, while considerable phasis was laid on defensive and offensive siege warfare.

Élite *ghulāms* served as shock cavalry and relied on a compact rge. Lighter harassment tactics predominated in the Arab armies of -11th century northern Syria, and by operating in small fast units were quite capable of defeating larger Byzantine forces. Kurdish alry seem to have been more heavily armoured, but a lack of se-archers among both these peoples led to their defeat by invading ks in the 11th century.

In broad strategic terms armies put huge effort into securing and ifying lines of communication, trying to hem their enemy into aller and less fertile areas. Advances were slow and methodical rather dramatic, while infantry garrisoned newly won territory and erected permanent or field fortifications. Troops recruited from different graphical areas enabled commanders to use soldiers with specialist lls, such as those experienced in mountain or desert warfare, phibious landing or urban warfare. This was, in fact, an age when pro- sional soldiers dominated warfare.

These skills remained after the 'Abbāsid state fragmented, though the armies became smaller. Islamic frontier defences were engthened at the peak of 'Abbāsid power, enabling the successor es to resist Byzantine counterattack more effectively than their sizes ld otherwise have warranted. Persistent raiding of enemy territory ained a favourite strategy among small frontier forces, and was nded to undermine the foe's economic stability rather than to defeat in open battle. Within the Middle East it was common for tribal ces to exert pressure on local governments by pasturing their flocks in fields which surrounded cities and to cut down their orchards. In ply, governments had to consider the cost of prolonged low intensity fare against bedouin who also tended to be an important source of alry horses.



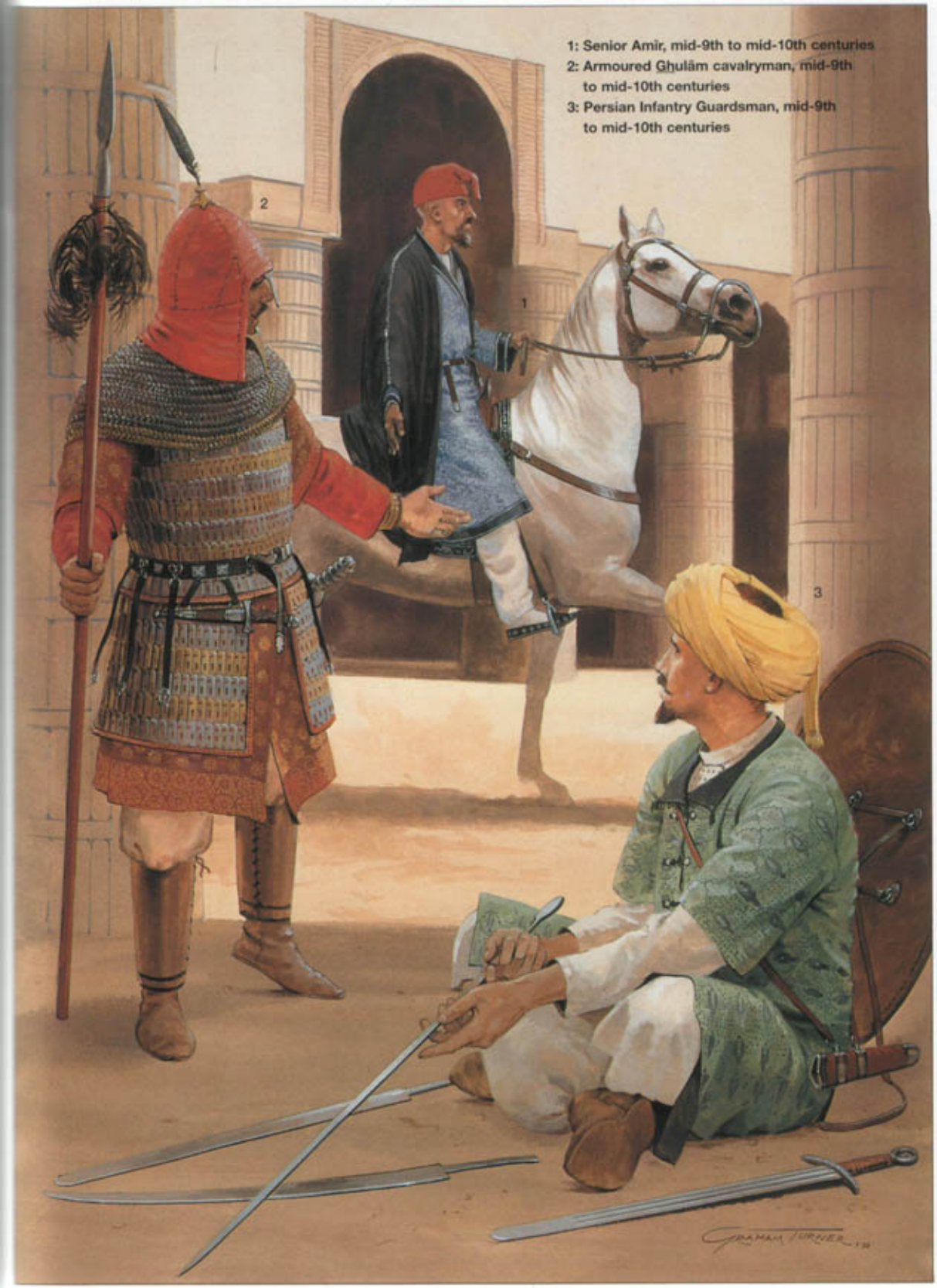
A set of doll's clothes from Moshchevaya Balka including shirt and drawers. (Hermitage, St. Petersburg)

A crescent carved from natural crystal and dedicated to the Fāṭimid Caliph al-Ẓāhir, Egypt 1021-36. *The metallic stand is* later medieval European. (Germanisches Nationalmuseum, Nürnberg)

Battlefield tactics remained essentially t same as those developed in the 8th centur *Ta'biya* close formations stood within th traditional five-fold *khamîs* of a centre, vanguard rearguard and two flanks. Lightly armoure cavalry formed the vanguard. Heavy cavalr flanked by infantry archers and followed by othe infantry, formed the centre along with th baggage train, hospital and other suppo services. Flanks and rearguard were probabl similar, while any siege train came behind. If a army was attacked before it was ready, its infant had to kneel and use spears as pikes whil defending themselves with large leather shield until their cavalry could counterattack, althoug this was recognised as difficult for inexperience troops. If the army was ready, its infant remained standing and held their spears again the upper part of their chests, supported b archers who shot at close range, while cavalry onl intervened if the infantry wavered. Cavalry we also trained to fight on foot, and the tactic horse-archers dismounting and shooting from kneeling position having emptied their quivers o the ground before them probably dated back t this time.

When drawing up an army in battle array was considered best to have hills at the rear or establish concealed ambushes to protect th army's back. It was best to place the centre o raised ground or to have the right flank raised. In any case, the commander should be on whatev high ground was available, and if this was n possible he should build a raised wood structure or ride on a camel or elephant. It w best to fight when dust and sun were in th enemy's eyes and if one's own cavalry had dust i their faces they should dismount. Ideally each unit was in five lines, th first two fighting, the third protecting that unit's baggage, the four consisting of light troops covering the baggage and the fifth serving a rearguard. Overall, the battle array would be in crescent shape, n necessarily with its wings pushed forwards, but with the centre mo numerous than the flanks. They should also have made a *zarîba*, temporary field fortification of baggage and animals, in case they had retreat. *Mubārizûn*, 'champions', often duelled between opposing for before a battle began, but were urged not to pursue a defeated foe mo than two-thirds of the way towards the enemy line in case they got cut o

Professional regiments had notably strong discipline, and we normally expected to await an enemy's move rather than initiating a attack. Cavalry were expected to charge around the flanks or throug lanes opened by their infantry, attacking then withdrawing to safe either to break the enemy line or to disrupt an enemy attack. When


1: Senior Amir, mid-9th to mid-10th centuries
2: Armoured Ghulām cavalryman, mid-9th to mid-10th centuries
3: Persian Infantry Guardsman, mid-9th to mid-10th centuries
1
2
3
GRAHAM TURNER


1: Sughdian Naffāṭah 'fire trooper', late 9th and 10th centuries
2: Khurāsāni Cavalryman, late 9th and 10th centuries
3: North Iranian foot soldier, late 9th and 10th centuries
3
2
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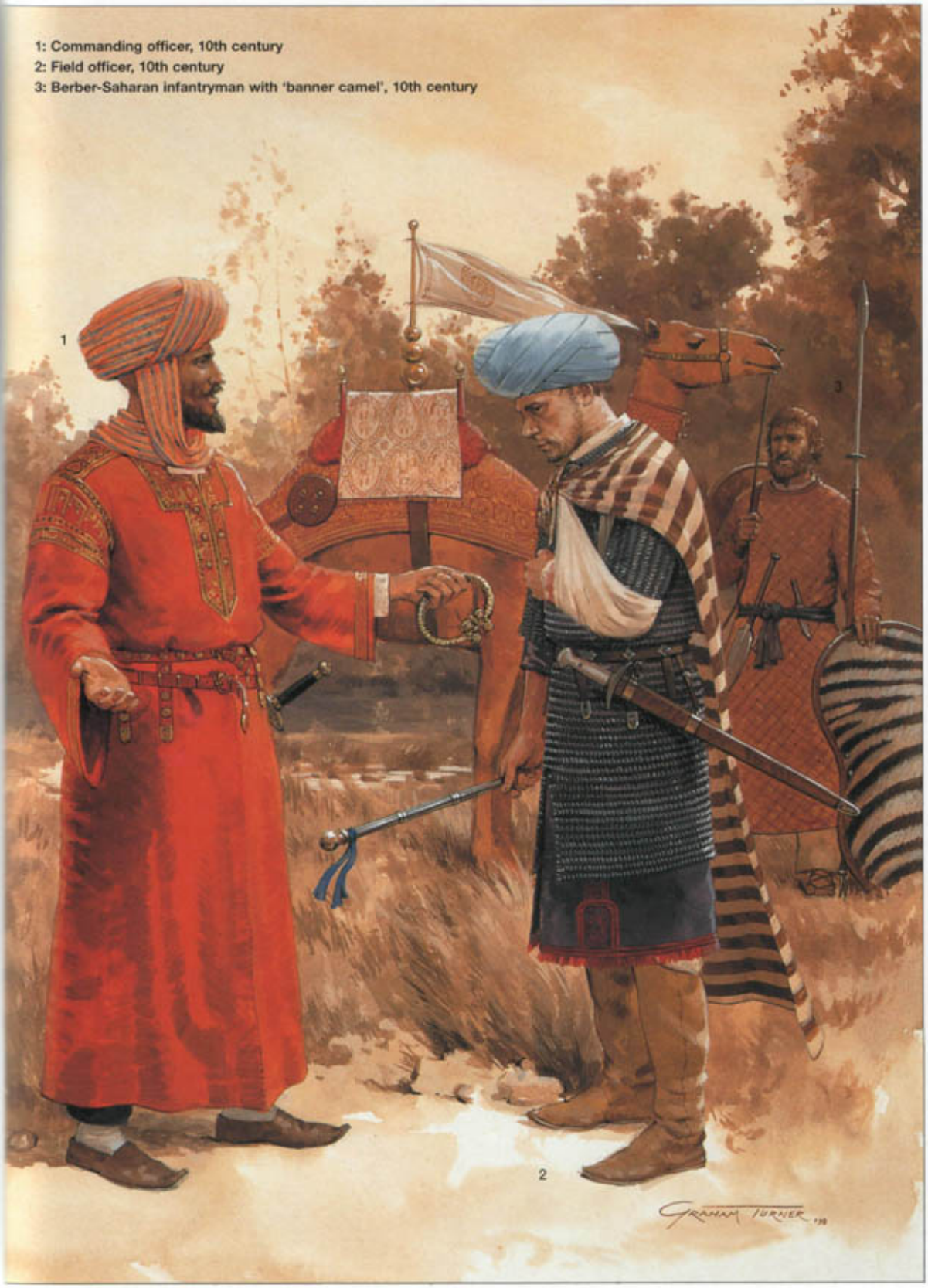
GRAHAM TURNER

B


1: Commanding officer, 10th century
2: Field officer, 10th century
3: Berber-Saharan infantryman with 'banner camel', 10th century
1
2
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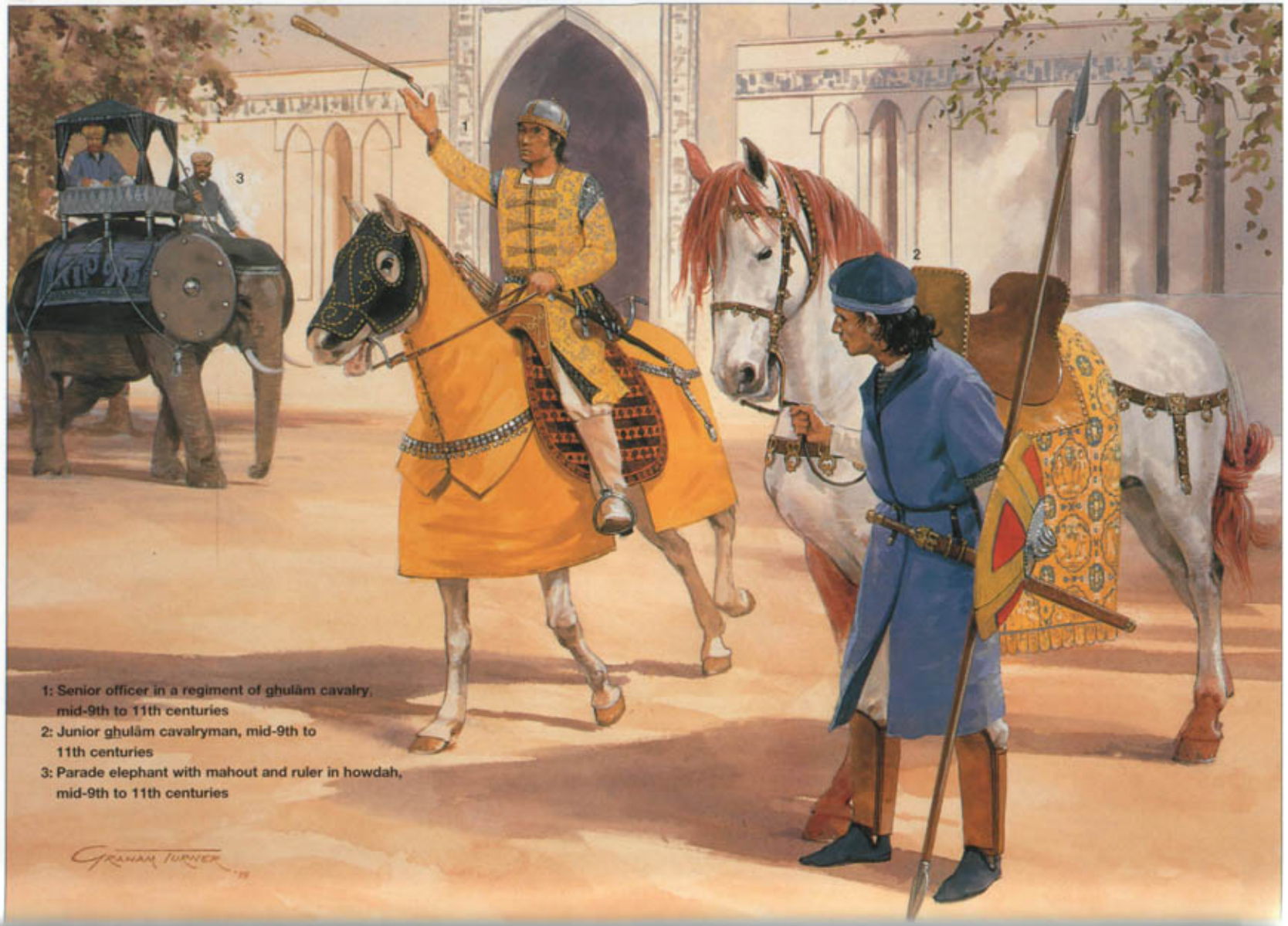
GRAHAM TURNER



1: Senior officer in a regiment of ghulām cavalry, mid-9th to 11th centuries
2: Junior ghulām cavalryman, mid-9th to 11th centuries
3: Parade elephant with mahout and ruler in howdah, mid-9th to 11th centuries

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1: Arab cavalryman, 10th and 11th centuries
2: Armenian 'Paulician' foot soldier, 10th and 11th centuries
3: Leader of a Qarmaṭi raiding force, 10th and 11th centuries

1: Marine crossbowman, 11th century
2: Palestinian infantry archer of the local Aḥdāth, 11th century
3: Fāṭimid infantry guardsman, 11th century


1: Ghaznawid bodyguard, late 10th and 11th centuries
2: Qarakhānid cavalryman in ceremonial costume, late 10th and 11th centuries
3: Indian mercenary cavalryman, late 10th and 11th centuries
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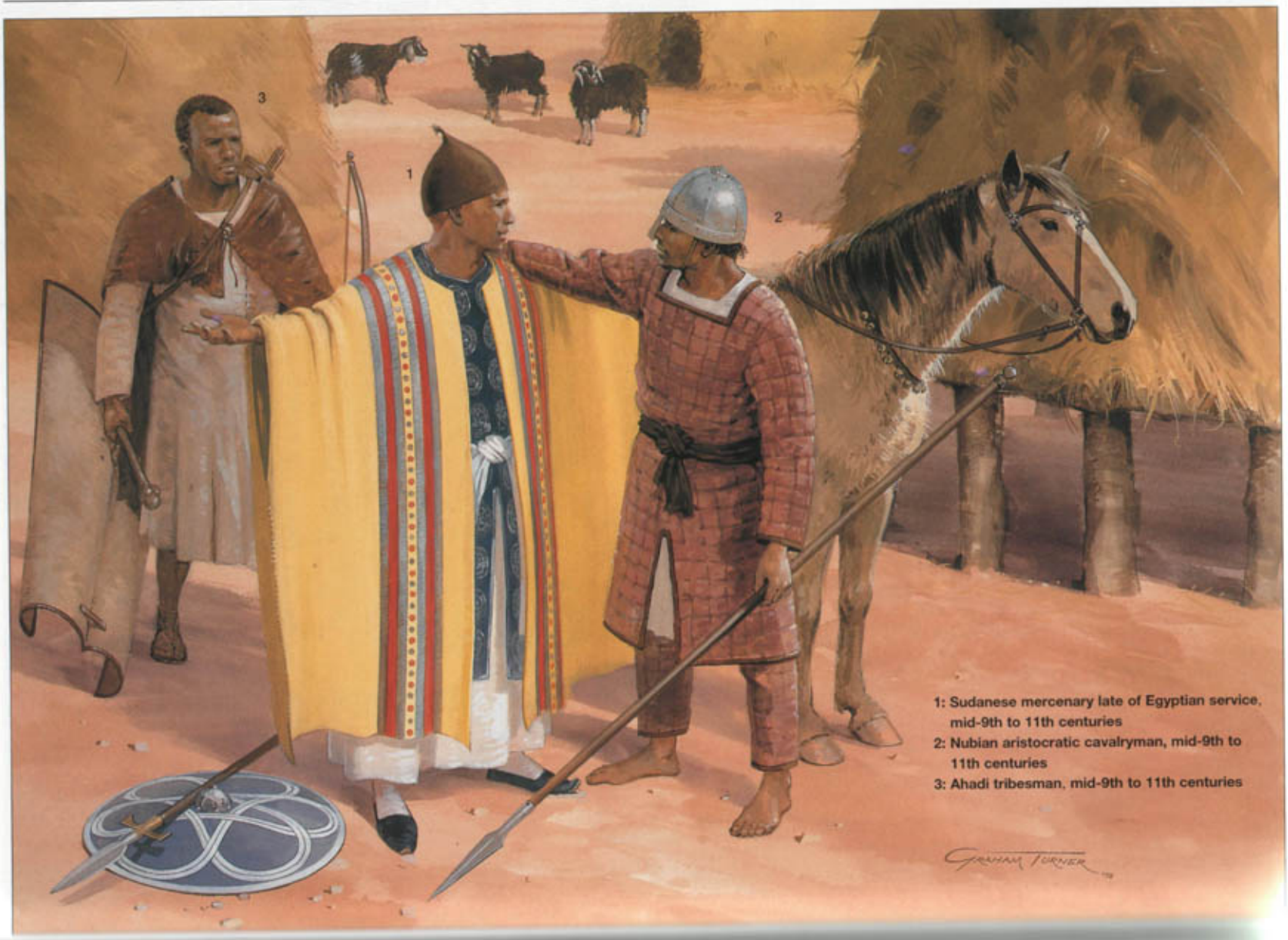
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1: Sudanese mercenary late of Egyptian service, mid-9th to 11th centuries
2: Nubian aristocratic cavalryman, mid-9th to 11th centuries
3: Ahadi tribesman, mid-9th to 11th centuries
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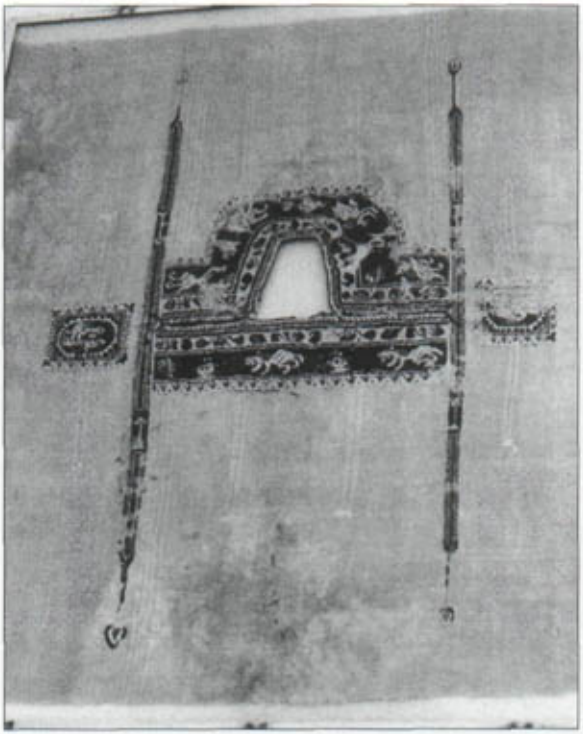
dvanced, it did so with infantry ahead of cavalry and should not more than one-third of the way to the enemy's main position. pursuit of a routed foe was similarly restrained, since feigned flight ften used to lure an enemy into a vulnerable position. Normally was done by the flanks, with the centre following up more slowly infantry protected the cavalry from enemy horsemen. The total ction of an enemy was to be avoided as this only provoked fiercer nce. Élite cavalry were also used for reconnaissance with the best s and only wearing a mail hauberk rather than a heavier lamellar ss. Above all, scouting parties must avoid raising dust or falling into y ambushes.

Buwayhid armies gave a more prominent role to Daylami infantry nded to put these men on the defensive left flank, while Turkish m cavalry were concentrated on the traditionally offensive right . Otherwise, Daylami tactics were to advance in a solid unbreakable behind its shields, then make a final charge with *zûpîn* javelins and s. Various detailed descriptions of battles indicate the strengths and eaknesses of such tactics. When fighting for control of a strategic ge in 957, for example, one side relied on repeated charges by *m* cavalry, while the other relied on Daylami infantry in defensive y. The former almost lost the battle when they ran out of arrows, but a mix-up in communications led a charge by supposedly 'inferior' ps who broke through the tired lamis then attacked them from the . A few years earlier an 'Abbāsid mmander placed *naffāṭûn* flame-ower troops ahead of his front line, t the wind changed, blowing smoke k against his own men, and the *ffāṭûn* were then killed by archers.

The *Shāhnāmah,* written for a mānid ruler, described how war phants formed up to the rear of moured cavalry who were themselves hind rows of infantry. Elsewhere, the *hnāmah* states that cavalry otected the elephants with archers their backs, while infantry with rge crossbows went ahead and foot oldiers with long spears came behind. he Ghaznavids made greater use of ar elephants, not only as mobile ommand posts, but having men med with spears and bows either ding or strapped to their backs, or sing elephants as battering rams.

Smaller Islamic armies in the Middle East had to use whatever was ailable to them. In 927/8 a *Qarmaṭî* eader had an *'ammārîah,* or 'camel howdah', as his command position

A 10th century ivory plaque from Fāṭimid Egypt, showing two guardsmen. (Louvre, inv. 6701B, Paris)



An embroidered Coptic Dalmatic with the same sort of decoration seen on Egyptian Islamic clothing. (Historical Museum, Rouen)

surrounded by his best cavalry. A late 10th cen Kurdish leader fooled an enemy into backing from a direct assault by sending herds of cat onto the hilltops with a few infantrymen amo them, flashing their swords in the sunlight so th from a distance they looked like a large caval force. A few decades earlier the governor o Caucasus town mounted local civilians on a available four-legged creature so that they al looked like a great army from a distance.

Fāṭimid tactics were essentially the same a those of the 'Abbāsids, and the abundance surviving information adds details such as th unfurling of banners just before an arm marched, the agreement of a battle cry befor combat, the morale-boosting speech by commander before battle and the selection officers to carry the commander's orders to thos in charge of outlying units. The relative lack archery, particularly horse-archery, in Fāṭimi forces was, however, a constant problem. On th march, units remained beneath their ow banners and had their weapons available but we not armoured. Men only donned armour if the commander expected an attack, and similarly those fleeing the ene were told to carry armour rather than wear it. A commander was advise to reinforce that side of his column which seemed most vulnerable attack, or to place scouts all around if he was uncertain where the ene was. Military pioneers played a major role on the march, position behind the scouting parties but ahead of the vanguard to improve roa and remove obstacles. The vulnerability of an army marching through pass or over a bridge was such that a commander supervised th operation personally. The *nuzûl* (halting or reassembling of an army the end of a day's march) was another vulnerable time, when infan were supposed to remain in defensive array while a fortifi encampment was erected.

During the 10th century, Islamic raiders into Byzantine territo used compact groups of mounted troops to protect those who scatter to plunder the enemy. Such formations also defended the bagg camels which grazed outside their camp. *Karadis* squadrons of li cavalry were best for ambushes and they rode mares rather than stalli which tended to snort and give away their position. Raiders who ente Byzantine territory from Tarsus would, according to their enemies, le ambushes to catch those Byzantines who were shadowing them. Dur such raids, a force of armed surveyors went ahead of the main bod arrange billets, quarters, measure out camp sites and locate water.

The training of professional Islamic troops remained hig structured. *Furûsîyah* meant 'skill', while *shujā'a* meant 'courage'. T famous 'Seven Year Training Scheme' attributed to the Sāmānids wa theoretical ideal rarely, if ever, achieved in practice. Here, the rec began as a foot groom and concluded as an *amîr*, 'officer'. In reali regimental leaders seem to have taken over responsibility for training

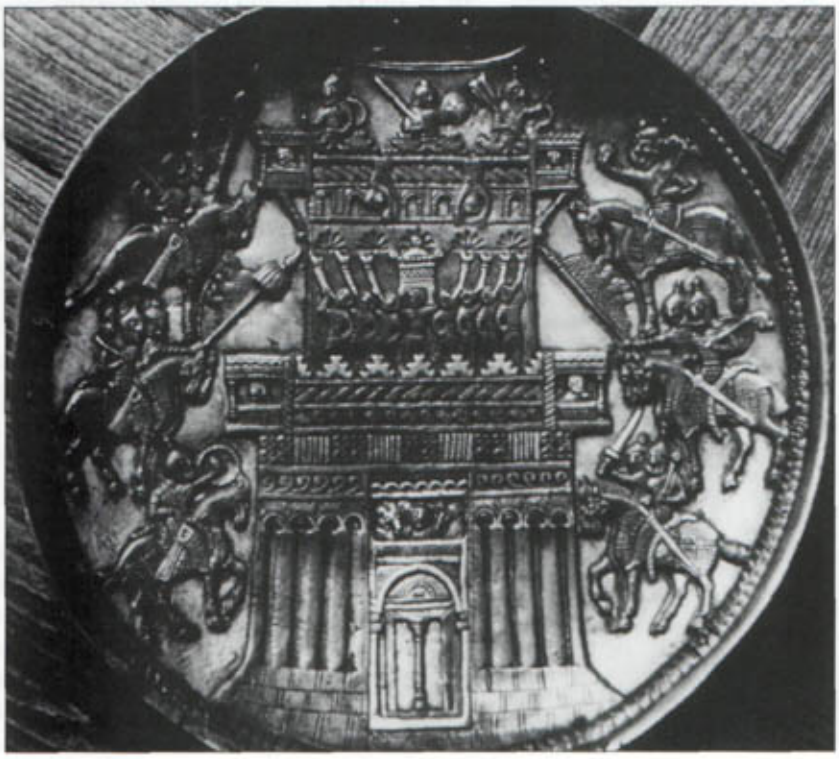
most 10th century states. Nevertheless, the maintenance of good quality *maydān* training grounds outside the major cities remained essential for good military standards. The Fāṭimid Palace-City of Cairo included *hujra*, 'barracks', and parade grounds where young *Hujarîyah*, 'recruits', were trained. By the later Fāṭimid period this involved three- to seven-year courses. The little that is known about the training of ordinary soldiers, volunteers or militiamen suggests that among the urban street entertainers were *bahlawān*, 'champions', who were masters of one or more martial arts and perhaps instructed those wanting to learn.

The skills demanded of a cavalryman were considerable, involving how to attack, maintain an attack, feign retreat, manoeuvre as a close-packed unit, evade an enemy charge and renew the attack. The Islamic style of horse riding forms the foundation of Spanish or American 'cowboy' equestrianism and reached its peak in the 12th-13th century. A firm seat was learned by riding bareback, before progressing to a saddle; it did not involve rising in the stirrups, but instead remaining firmly attached to the saddle whatever the horse did. Training manuals include much more about spears than other weapons, though these exercises seem designed to refine unit manoeuvre rather than individual skills.

For foot soldiers, unit training involved little more than an ability to march long distances, to recognise when an enemy was about to attack, to adopt formations rapidly, take cover, and check and pursue cavalry. One interesting form of archery training recorded in 10th century Syria involved the *'ajala*, a stuffed animal on a four-wheeled cart which was rolled downhill or pulled by a horseman as a moving target. The 12th century military writer al-Tarsusi, repeating Fāṭimid or 'Abbāsid sources, told an archer how to deal with different sorts of target, opponent or number of opponents depending on whether he was alone, in a group, shooting in the open or from behind cover.

Combat techniques are also described in verse. The Persian *Shāhnāmah* has cavalrymen first using spears to break the opponent's armour. They then duelled with swords while protecting their heads with shields, and finally used maces until 'points and binding broke'. Lassos were coiled on saddle-bows and daggers secreted in boots. From the 9th to 11th centuries sword fencing, and presumably the training which lay behind it, emphasised rapid and accurate cuts

An army of heavily armoured cavalrymen, one on an armoured horse, attacking a fortress on a 9th-10th century silver plate made near the Islamic frontier at Semireçye in Central Asia. (Hermitage, St. Petersburg)



Goliath on the exterior of the Armenian Church of Gagik, early 10th century, and represented as a fully armoured Muslim *ghulām* soldier. (in situ, Island of Aght'amar, Lake Van. Author's photograph)

rather than thrusts. The spear remained the most feared cavalry weapon, Arab horsemen relying on the impetus of their horse to deliver a thrust, whereas Turks and Persians supposedly pushed with both arms.

Khurāsānis, Persians and *ghulāms* normally used shower-shooting archery techniques in which units of cavalrymen, their horses standing still, shot at an astonishing rate to shower arrows upon an advancing enemy. Archers had several forms of draw, including the *daniyyāt*, using three fingers and the *bazm*, or 'thumb draw'. Less is known about infantry archery, although it included an ability to shoot beneath a shield using a guige to keep the shield from slipping around the left arm.

The *burj* or tower formed the main feature of Islamic fortifications. Most were solid for much of their height, with only the top being used for defensive purposes. The old machicolation was widely used, sometimes as an elongated wall gallery, but a new feature was the bent entrance which came from the eastern frontiers of the Islamic world. It was designed to stop a cavalry break-in and was usually an integral part of the gate's structure, although in some places a bent entrance was formed by adding new walls to the exterior of existing gates. Islamic fortification was generally more scientific than that of the Byzantines and used finer masonry or brickwork. Anazarva and Haruniyah are the best-preserved 'Abbāsid castles on the Anatolian frontier, both being restored by Sayf al-Dawla in the 10th century using fine ashlar masonry. Haruniyah, on a mountain spur overlooking a pass through the strategic Jabal Lukkûm, was a day's march from the military base of Marash. It consists of an elongated keep with a massive tower and continuous galleries along the most vulnerable walls. Much of the interior is covered in smooth stucco and there is some contrasting black basalt and white limestone for decorative effect.

The great cities of northern Syria and the Jazîra were also strongly fortified. Diyarbakir had four all-iron gates in the inner wall, beyond which was a lower wall leaving a passage broad enough to move troops rapidly from one section to another. The great city of Aleppo was walled, but its famous citadel hill was not fortified until after the 11th century. It could, however, serve as a refuge where people barricaded themselves behind horse and pack saddles while an enemy looted the town below. Further from the Byzantine threat, 10th century Damascus only had mud brick walls like those of Raqqa and Baghdad, though the vulner-ability of the Mediterranean ports meant that they had stone fortifications and stone-throwing machines pointing out to sea.

Iraq, Iran and the east continued to develop earlier styles which again made considerable use of brick. Egypt felt little need for fortification, except along the Mediterranean coast where most defences

were also of brick. Even the capital, once known as Miṣr, then as Fusṭāt and finally as Cairo, was not strongly fortified until the 12th century. The walls of the Fāṭimid palace city of al-Qāhira (Cairo) were largely symbolic, and were made even more magnificent in the late 11th century with the three decorated gates which remain one of Cairo's glories. The small 10th century forts in what is now southern Jordan served as tribal refuges, to protect harvests and water supplies, while the castles mentioned by chroniclers in what is now western Saudi Arabia may have served the same purpose. To the east, in Yamāmah and along the Gulf coast, there were several towns fortified with mud-brick or beaten earth.

Siege techniques developed steadily. Attackers would defend themselves with trenches and place strong cavalry in front of the gates to stop sorties. First they used small stone-throwing machines, then built up to the largest to undermine the defenders' morale and force their heads down while miners excavated beneath the walls. Such machines could be placed on artificial mounds to dominate the defenders. Wooden siege towers and protective wooden sheds were, however, vulnerable to *naft*, or 'Greek Fire'.

Armies could maintain remarkable rates of march over astonishing distances. The infantry probably kept up a steady pace from sunrise to sunset with brief stops for prayers and water, while cavalry could move faster but were unable to maintain the pace for so long. They also had to unsaddle and water their mounts before they could sleep. Camels gave armies a distinct advantage in dry terrain, carrying baggage, siege machines and mounted infantry, though mules and donkeys were also used. Large bridges over great rivers were more characteristic of the Islamic world than early medieval Europe, yet they still formed choke points and were the site of many battles. Fords had a similar effect, though given the seasonal nature of rainfall in the Middle East, even the biggest rivers could be crossed with relative ease when the water was low.

Official communications systems were comparable to those in China, but nothing so sophisticated could be found elsewhere. The astonishing speed and distances of the 'Abbāsid governmental postal service could not be maintained by most successor states, though in the 10th century the Buwayhid dynasty introduced runners for greater secrecy and a pigeon-post for urgent messages. During battle, communication was by flags, trumpets, drums and battle-cries, which also helped maintain morale. Nevertheless, military texts recognised that noise and show had little effect on a determined foe. Espionage and intelligence-gathering was similarly highly developed, using *jāsûs*, 'spies', and '*ayn*, 'military observers'. One text mentions a message written in black ink on black cloth which only became visible when the fabric was wet. Under

One of the most unusual ceramic plates from 9th-10th century Nīshāpūr shows cavalry and infantry. (Museum of Oriental Art, inv. 2629/3258, Rome)

Ceramic from 10th century Iraq showing an apparently unarmoured cavalryman wielding a sword with what might be a ring-pommel more commonly seen in Central Asia. (Keir Coll. London)

Islamic law, however, it was more acceptable to use secret agents against external foes rather than internal rivals.

NAVAL WARFARE

Naval trade and naval warfare were closely regulated, as were the construction and loading of ships and the responsibilities of various officers. Such regulations also dealt with captives and booty, and how to dispose of dead bodies depending on whether the ship was on the high seas, near a coast and whether this coast was part of an Islamic state. Coastal *ribāṭs* were also supposed to offer shelter and suppress piracy. Naval officers included the *qā'id* or *muqaddam* in command of marines and the *ra'is*, in charge of the ship and sailors. On Islamic warships oarsmen were free men who were expected to join the fighting as and when this became necessary.

Islamic fleets suffered from a worsening shortage of timber. Wood was imported from Italy, Dalmatia and Crete, while ready-made ships were purchased in Italy. On the other hand, the Muslims possessed the largest ships in the Mediterranean, including three-masted vessels by the 11th century or earlier, and had access to advanced Chinese maritime technology. The change to frame-first, from skin or hull-first construction, may have first been seen on the Arab side of the Mediterranean as a result of the Muslims' shortage of timber, and recently this has been tentatively linked to changes in tactics. The ancient ram is thought to have fallen out of use by the 7th century, and the use of frame-first construction finally made this weapon obsolete, since it had been designed to spring the watertight seams of a hull-first ship, but normally bounced off a flexible frame-first hull.

Although the Chinese did not normally sail the western Indian Ocean until the 12th century, it was from China that Muslim shipwrights learned of the hinged stern rudder. This reached the Arabian Gulf and Red Sea by the 10th century, but why it did not spread to the Mediterranean remains a mystery. Sophisticated navigational aids were used in river navigation as well as on the high seas; upstream of 11th century Basra at least one wooden lighthouse guided sailors through the marshes of southern Iraq. In Egypt the famous ancient lighthouse at Alexandria was also still used. By the 10th century Arabian Gulf mariners had maps which divided latitude and longitude, with additional information on winds and tides. In the open ocean, captains used a simple *kamal* to measure the Pole Star and maintain a constant latitude. Around the same time Muslim naval engineers had learnt how to raise sunken ships using winches.

Navies had transports as well as fighting galleys, the high sides of the biggest Fāṭimid transports baffling most enemies. The largest *shallandī*, for example, was a decked cargo ship of up to 1,000 tonnes capacity, able to carry 1,500 troops. Galleys were differentiated by weight

and the number of oars rather than overall dimensions. The *shînî* standard galley had up to 150 marines, normally with 140 to 180 oars in two banks, a boarding beak at the prow, and a substantial forecastle to carry stone-throwing machines or *naft* fire projectors.

Coastal raiding formed the basis of naval warfare, and coastal defence remained paramount, particularly in the Mediterranean where an outburst of European slave-raiding prompted a revival of naval warfare by local North African dynasties in the 9th century. By the 11th century, however, European naval domination became irreversible. The coastal *ribāṭs* and their garrisons were supposed to contain enemy landings until reinforcements arrived. Larger garrisons, however, tended to withdraw inland when the seas were 'closed' by winter weather. Nevertheless, harbours and coastal towns remained tempting targets. Consequently some were greatly strengthened, such as Maḥdia in Tunisia, whose harbour was actually cut from the rock face to accommodate 30 galleys.

It had been unusual to tackle the enemy at sea. Instead, galleys waited until merchant ships beached for the night. More ambitious coastal raids included an attack on Thessaloniki harbour in 904. Here, the Muslims tied their ships in pairs, suspended platforms on the yardarms of their lateen sails or between their masts, and were thus able to shoot down upon the defenders. A North African fleet of 73 ships landed 500 horses and a far greater number of fighting men near Ostia in 846. This force ravaged a large area including Rome before withdrawing laden with booty. The ability to transport cavalry horses was further developed in Islamic Sicily and may then have been taught to the subsequent Norman invaders of both Southern Italy and England.

When fleets did clash at sea, horns, cymbals and drums communicated between ships, but control was so poor that such battles were usually avoided. Mediterranean naval tactics were designed for small numbers, the ships usually being in loose crescent formation and using ambush or feigned retreat like their colleagues on land. After skirmishing with archery, one crew would attempt to board the enemy. Marines were trained to defend themselves with large shields rather than wearing heavy armour, and once on the enemy's deck they fought with swords and daggers hidden within their shields. By the 11th century tactics were changing, with Muslim galleys developing the ability to launch attacks on enemy ships at sea. Perhaps as a result, convoys of merchant ships were defended by war-galleys.

The Indian Ocean remained more peaceful and it was here in trans-oceanic voyages that Islamic

The interior of the Bāb al-Futuḥgate in Cairo. (Author's photograph)

The back of an 11th-12th century bronze mirror from Iran showing a cavalryman holding his spear in an almost couched manner. (Louvre, inv. 6020, Paris)

navigation reached its peak. The long-distance transportation of horses was also commonplace. Nevertheless, the periodic dredging and silting up of a canal between the Nile and the Red Sea – the 'Suez Canal' of the early medieval period – may have been associated with Egyptian efforts to suppress piracy in the Red Sea, since most Egyptian warships were based in the Mediterranean.

AFRICA

Military developments in medieval Africa stemmed almost entirely from contact with the Islamic world. Islam's presence on the East African coast also resulted in political control of a few ports, but not the hinterland. Ethiopia and the kingdoms of Nubia remained Christian, however. Ethiopia lost the Red Sea coast by the 9th century and thereafter looked southwards rather than to Southern Arabia where its language and civilisation had originated. After 975 pagan Agau tribesmen, led by a terrifying queen, ravaged the country to such a degree that Ethiopian power collapsed and the ancient capital of Axum was destroyed. During the following chaotic years Islam made great advances, though the highlands largely remained Christian.

Tenth century Arab geographers provide a little military information about Ethiopia. The principal weapon remained a simple all-wood longbow, sometimes with a cotton string. Long javelins were used, but only the élite possessed shields and swords. Cavalry were rare even in the eastern lowlands, where most horsemen used goat-skins rather than framed saddles.

The largely pagan Beja formed a loose tribal state along the Red Sea coast by the 9th century. Warlike and organised into small family groups, they used bows and poisoned arrows but not shields. Neighbouring Christian Nubia had a more advanced civilisation where Greek was still used for official titles. Originally there were three kingdoms, but the two northern ones merged into larger Makuria with its capital at Dongola. Less is known about the southern kingdom of Alwa whose capital was at Soba, near modern Khartoum. It was closer to pagan regions from which most African slaves were drawn, and Alwa's interests were mainly turned southwards. Quite how far medieval Alwa's authority extended is unknown, but Christian communities existed in Kordofan between the 8th and 12th centuries.

Nubian relations with Islamic Egypt had been governed by a *baqt* or pact since the mid-7th century, though this was occasionally broken by frontier squabbles. The military organisation of Nubian Makuria was based on 13 sub-kings or *Eparchs*, of whom the most northerly and powerful had his capital at Faras or Qaṣr Ibrim. The Nubian Nile was defended by an increasing number of castles, though probably against Beja nomads rather than Muslim Egypt. Nubian infantry archers still had a fine reputation, using longbows of acacia wood similar to those of ancient Egypt, and even as late as 950, Nubian armies were strong

enough to capture much of the population of Egypt's western oases. More cavalry existed in the southern kingdom of Alwa, which was famous for breeding horses in the 10th century. Another little-known Christian off-shoot of Nubia were the Ahadi who inhabited mountains west of the Sudanese Nile. Their warriors shared several items of weaponry and costume with the Muslim peoples of North Africa, including large *lamṭ* leather shields and quilted armour.

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A fragment of lustre ceramic from 10th-11th century Egypt provides one of the clearest illustrations of an infantry or naval soldier. (Victoria and Albert Museum study collection, London)

The mosque which formed an integral part of the fortified 9th century *ribāṭ* at Monastir in Tunisia. (Author's photograph)

THE PLATES

A: 'Abbāsid Caliphal Armies (dating from mid-9th to mid-10th centuries)

A1: Senior Amīr This officer has his tall *qalansuwah* hat bent forwards to shade his eyes, although this was regarded as bad manners in the presence of the Caliph. Otherwise he wears a black '*abā*' cloak to show his allegiance to the 'Abbāsid dynasty over a silk *khaftān* with embroidered *ṭirāz* bands around the upper arms. (Main sources: 10th century medallions of the Caliph al-Muqtadir, Nat. Mus., Baghdad, and Staat. Museen, Berlin; 10th century carvings of the Church of Gagik, *in situ* Aght'amar, Lake Van.)

A2: Armoured Ghulām cavalryman As a member of an élite palace regiment, this man has an iron helmet beneath a large hat, a mail aventail which could be pulled over the face, a lamellar cuirass, including thigh defences, and laminated arm protections which now seem to have been going out of favour. His long spear has a bunch of black ostrich feathers beneath the blade. (Main sources: 10th century medallions of the Caliph al-Muqtadir, Nat. Mus., Baghdad, and Staat. Museen, Berlin; 10th century carvings of the Church of Gagik, *in situ* Aght'amar, Lake Van; wall-paintings from the palace of the governors of Ushrusana, late 9th century.)

A3: Persian Infantry Guardsman This man has fine clothes suitable for service in the palace and is inspecting sword-blades from various sources. He wears a bulky '*imāmah* turban, a decorated Persian-style *khaftān* over a larger *khaftān*, and baggy trousers tucked into his boots. His leather shield is of the large type used by foot soldiers. (Main sources: 10th century ceramic plate from Iraq, Keir Coll., London; mid-9th century wall-paintings from Samarra, Mus. für Islamische Kunst, Berlin; 9th-10th century Georgian carving of St. Eustace, Nat. Museum, Tblisi; carving of an Arab governor, church of the Holy Cross, 9th-10th century, Mtzkhet'a, Georgia.)

B: Sāmānid Armies (late 9th and 10th centuries)

B1: Sughdian Naffāṭah 'fire trooper' The only known illustration of a hand-held Greek Fire projector is in an 11th century Byzantine manuscript, but earlier Arabic written descriptions are very similar. The *naffāṭah* himself is dressed as a heavily armoured east Iranian infantryman with a one-piece iron helmet a... lamellar aventail. (Main sources: Ms. Gr. 1605, Byzanti... 11th century, Bib. Nat. Paris; kneeling archer on silk clo... Iran 9th-11th centuries, Mus. of Art, Cleveland, Ohio.)

B2: Khurāsāni Cavalryman This cavalryman has been give... a lamellar cuirass over a long-sleeved mail hauberk whic... seems to be tucked inside his thickly quilted trousers. Th... extremely long cloth beneath his saddle was a widespread... fashion. (Main sources: 9th-10th century ceramics fro... Nīshāpūr; Motamed Coll., Frankfurt, Archaeol. Mus., Tehra...

BELOW **The gate of the *ribāṭ* at Sûs in Tunisia. (Author's photograph)**

RIGHT **The warrior Saint Menas shown as a Nubian tribal cavalryman in a unique 9th-10th century Nubian manuscript. (British Library, Ms. Or. 6805, f.10, London)**

Met. Mus. of Art, New York; 10th century wall-painting from Nīshāpūr, Archaeol. Mus., Tehran.)

C3: North Iranian foot soldier Most of this man's clothing is based on that found at Moshchevaya Balka, a few hundred kilometres away on the northern side of the Caucasus mountains, while his weaponry reflects that illustrated on ceramics and elsewhere. (Main sources: 9th-10th century ceramic from Nīshāpūr, Mus. of Oriental Art, Rome; clothing and weaponry from Moshchevaya Balka, 8th-9th centuries, Hermitage, St. Petersburg; helmet from western Siberia, probably Islamic origin, 8th-10th centuries, ex-Solovyev).

C: Early Fāṭimid Armies (10th century)

C1: Commanding officer This officer's turban in the *muhannak* style and his Arab *durrā'a* tunic are examples of the Fāṭimid's revival of earlier Islamic fashions. He gives a golden *ṭawq* to the junior officer as a mark of his promotion. (Main sources: carved ivory plaque, 10th century Egypt, Louvre, Paris; embroidered woollen tunic, Egypt 8th-9th cents., Whitworth Gall., University of Manchester.)

C2: Field officer The junior leader has a simple tribal cloak with a North African shoulder-pin, worn over a businesslike mail hauberk, while his silver-covered staff of rank is based on written descriptions of Fāṭimid military parades. (Main sources: wall painting of St. Phiobammon from Church of 'Abd Allah Nirqi, Nubian-Egyptian 11th century, Coptic Mus., Cairo; carved wooden panel from Attiri church, Nubia, 11th-12th centuries Egyptian, Nat. Mus., Khartoum; painted ceramic plaque from Sabra, 10th-11th centuries, Mus. des Arts Islamiques, Tunis.)

C3: Berber-Saharan infantryman with 'banner camel' Berbers formed the loyal core of the Fāṭimid army, but used old-fashioned equipment. This man has a specialised pike called a *ṣabarbahah*, and his shield is decorated with animal-skin. Flag-carrying camels were used as rallying points in several Islamic armies and their harness appears to have been very decorated. (Main sources: fragments of a carved ivory plaque from Aqaba, 9th-11th centuries, Archaeol. Mus., Amman; ceramic wall-plaque from Sabra, 11th century, Bardo Mus., Tunis; wall painting of a military saint from Faras Cathedral, late 10th century Nubian, Nat. Mus., Warsaw; fragment of painted paper from Cairo, 11th-12th centuries Egypt, H.P. Kraus Coll., New York; lustre-ceramic bowl from Iraq, 9th-10th centuries, City Art Mus., St. Louis.)

D: Buwayhid Armies (mid-9th to 11th centuries)

D1: Senior officer in a regiment of ghulām cavalry Here the commander of a cavalry regiment has a helmet of one-piece iron construction, mail-lined but fabric-covered *kazāghand* armour, and archery equipment designed for high-speed shower-shooting. He demonstrates his dexterity with a long-headed mace called a *laṭṭ*, while his horse has an early form of quilted or felt-lined horse-armour. (Main sources: silver dish from Malo-Amkovkaya, 9th-10th century Semireçye, Hermitage, St. Petersburg; gold medallion showing a Buwayhid prince, late 10th century, Freer Gallery, Washington; Islamic helmet, 9th-10th centuries, Schweizerisches Landesmus., Zurich; iron chamfron from Soba, 8th-12th centuries, Nat. Mus., Khartoum; St. Ptolomeus of Nikentori, Coptic Synaxary 9th-11th centuries, Peirpont Morgan Lib., M. 581, f.1v, New York.)

D2: Junior ghulām cavalryman This young soldier wears a mail shirt beneath his coat and is armed with a straight sword. His double-ended spear might be a *zūpīn* javelin. The horse is the commanding officer's parade mount and has all the decorations and henna colouring mentioned in contemporary documents. (Main sources: 10th century wall painting from Nīshāpūr, Archaeol. Mus., Tehran; horseman on a gold pendant, Iran, 10th century, Art Museum, inv. 1953.70, Cincinnati; pieces of bronze horse harness from Nīshāpūr, 9th-11th centuries, Archaeol. Mus., Tehran, and Met. Mus. of Art, New York.)

D3: Parade elephant with mahout and ruler in howdah Elephant harness, the howdahs and the way the animals were controlled stemmed from India. One of the most dramatic items were huge shields to protect the elephant's sensitive ears. (Main sources: ceramic fragment, 10th-11th century Egypt, Benaki Mus. inv. 244, Athens; ceramic fragment, 11th century Egypt, Brooklyn Mus. inv. 69,122.1, New York; carved ivory plaque, 11th-12th centuries Egypt, Walters Art Gall., Baltimore; ceramic elephant, 12th century Iran, Freer Gall. 67.26, Washington.)

St. Phiobammon on a wall-painting from the early 11th century church of 'Abd Allāh Nirqi in Nubia. (Coptic Museum, Cairo)

E: Ḥamdānid Armies (10th and 11th centuries)

E1: Arab cavalryman A revival in the importance of Arab soldiers in the Middle East was mirrored by a return to several forms of Arab costume and weaponry. This man has a very advanced form of one-piece iron helmet beneath his traditional turban, a mail hauberk beneath an Arab *thawb* and a sword from an old-fashioned baldric. (Main sources: 10th century painted paper fragment, Egypt, Bib. Nat. Ach. Vindob. 11416, Vienna; 11th-12th century painted paper fragment, Egypt, Mus. of Islam. Art, Cairo; 11th century fragment of lustre ceramic, Egypt, Mus. of Islam. Art, Cairo; *thawb*, 11th century, Egypt, Coptic Mus., Cairo.)

E2: Armenian 'Paulician' foot soldier This man has thickly quilted soft armour, with a sheet of rawhide on the front as a hypothetical reconstruction of otherwise unexplained central Anatolian wall paintings. He is armed with a narrow bladed axe and has a quiver on his back. (Main sources: wall-painting, early 10th century, *in situ* Toqali Kilise, Goreme, Cappadocia; wall-painting, 10th-11th century, *in situ* Bahattin Kilisesi, Peristrema valley, Cappadocia.)

E3: Leader of a Qarmaṭī raiding force The Shaykh is dressed in traditional Arab garb and uses the howdah of a camel as his command post in battle. (Main sources: painted ceiling, in Fāṭimid style, early 12th century, *in situ* Capella Palatina ceiling, Palermo; decorative standard-head from the Serçe Liman wreck, late 10th-early 11th century, Castle Museum, Bodrum.)

F: Later Fāṭimid Armies (11th century)

F1: Marine crossbowman Fāṭimid naval troops were probably the first outside Chinato use hand-held crossbows for fighting at sea. This marine is dressed in typical Egyptian style, has a tall infantry mantle and a helmet which evolved from a late Roman type. His crossbow is of a very early form, consisting of an Arab bow mounted on a stock equipped with a small trigger for firing the dart. (Main sources: helmet, possibly 11th century, Islamic Museum, Kayrawan; carved wooden panels from the Fāṭimid Caliphal Palace, 11th century, Museum of Islamic Art, Cairo; illustrations of crossbows, manuscript of al-Tarsusi, 12th century, Bodleian Lib., Ms. Hunt 264, Oxford.)

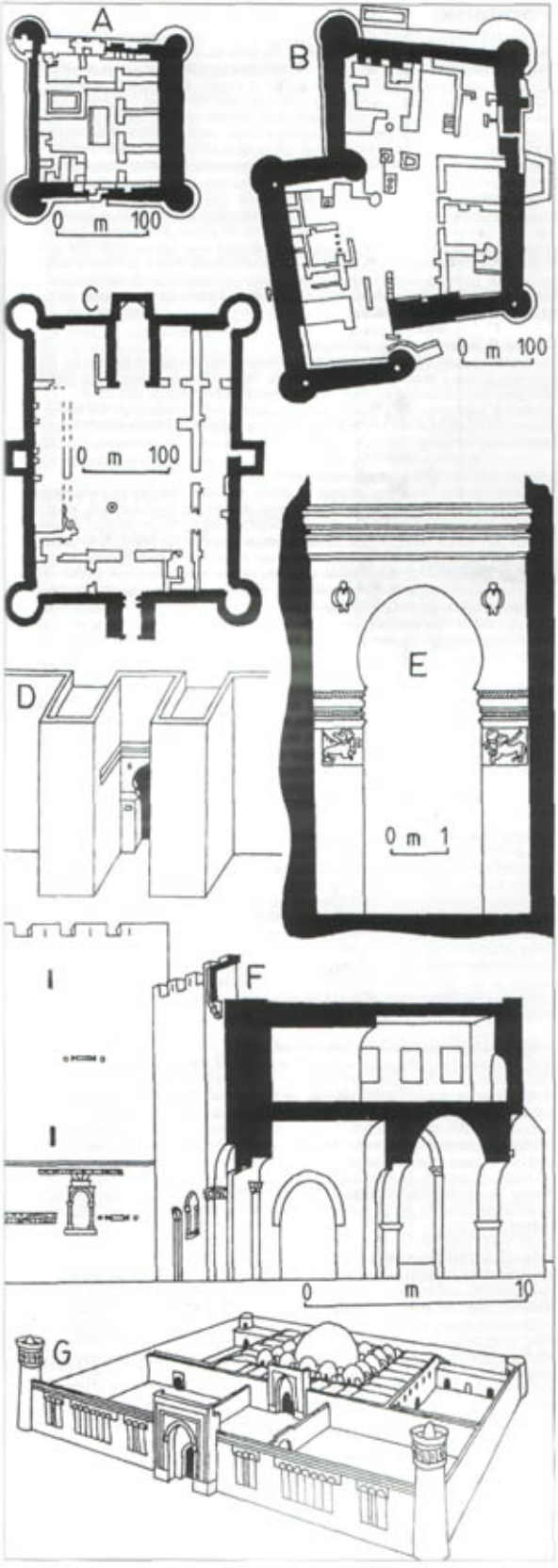
F2: Palestinian infantry archer of the local Aḥdāth This militiaman wears the loose trousers common throughout the Arab areas, as well as rope-soled sandals and a cummerbund. He carries an old-fashioned short sword and has an old-fashioned bow, which used to be used by Arab infantry. (Main sources: carved ivory plaque showing an Arab warrior, 10th-11th century Byzantine, Hermitage, St. Petersburg; carved wooden panels from the Fāṭimid Caliphal Palace, 11th century, Museum of Islamic Art, Cairo; carved wooden panel from the Church of Saint Barbara, 11th century, Coptic Museum, Cairo; carving of Islamic soldiers, mid-12th century. Siculo-Fāṭimid style, *in situ* Church of La Martorana, Palermo.)

F3: Fāṭimid infantry guardsman Fāṭimid Caliph's Palace Guard regiments were magnificently – and expensively – equipped, in this case with a fluted gilded helmet, lacquered leather lamellar armour over a mail hauberk, and a heavy infantry spear. (Main sources: painted paper fragments, Fāṭimid 11th-12th centuries, Keir Coll., London, and Mus. of Islamic Art, Cairo; carved ivory plaques, 10th-11th centuries, Fāṭimid, Louvre, Paris, Bargello, Florence, Mus. für Islamic Kunst, Berlin, Met. Mus., New York; carved wooden panels from the Fāṭimid Caliphal Palace, 11th century, Museum of Islamic Art, Cairo.)

G: Ghaznavid Armies (late 10th and 11th centuries)

G1: Ghaznavid bodyguard The feathered head-dresses of élite Ghaznavid guard units are described in written sources and appear on painted ceramics. Like this man's coat and boots, it probably originated in Central Asia. Maces, like elaborate belt pedants, were another mark of élite status. (Main sources: wall-paintings from Lashkari Bazar, 11th century Ghaznavid, Archaeol. Museum, Kabul; iron mace-head, 11th-13th centuries, Iran, British Museum, inv. 838-89, London; feathered head-dress on a painted ceramic, 12th century Iran, private collection.)

G2: Qarakhānid cavalryman in ceremonial costume Little art survives from the Qarakhānid state, though there are



written descriptions and some isolated fragments which are difficult to date. This man's extraordinary head-cloth is an example of a style which probably originated in pre-Islamic Turkish Central Asia and was eventually inherited by the Saljūq Turkish Court. Otherwise he has been given Turco-Persian and Central Asian garments, weaponry and horse-harness. (Main sources: ceramic figures from Transoxania, 11th-13th centuries, Turco-Islamic, Hermitage, St. Petersburg; ivory chess-knights, 11th-12th centuries, Met. Mus. of Art, New York; ceramic horsemen, 12th century northern Iran, Met. Mus. of Art, New York, and Archaeol. Museum, Tehran.)

G3: Indian mercenary cavalryman This man reflects the unarmoured style favoured by members of the Hindu high military caste. Only the riding boots reflect the slow absorption of Iranian and Islamic fashions. Perhaps the strangest item is the gold netting supporting his beard. (Main sources: mounted guards of Vishnu/Harikara, late 10th century central India, British Museum, inv. 1872.7-1.75 and 7-1.41, London; carving of a warrior, 10th century Rajastan, Fogg Art Museum, inv. 1961.134, Boston; carved memorial plaque, 12th-13th centuries, Gond, Mahant Kaasi Dass Memorial Museum, Raipur.)

H: Nubia and the Sudan (mid-9th to 11th centuries)

H1: Sudanese mercenary late of Egyptian service This man has been a member of an élite palace regiment, as shown by the magnificent embroidery on his '*abā*' cloak, his highly decorated shield and his gilded infantry spear. (Main sources: 'Veil of St. Anne', in reality a late 11th century Fāṭimid '*abā*', Treasury of the Church of St. Anne, Vaucluse; fragment of lustre ceramic, 10th-11th century Egypt, Victoria and Albert Museum study collection, London.)

H2: Nubian aristocratic cavalryman Quilted armour including padded trousers remained the standard form of protection in sub-Saharan Africa for a thousand years. Most iron items are likely to have been imported from Islamic North Africa or Egypt. (Main sources: St. Menas in a 9th-10th century Nubian manuscript, Brit. Lib. Ms. Or. 6805, London; wall-painting from Faras Cathedral, 10th century Nubia, Nat. Mus., Khartoum; carved wooden plaque from Qaṣr Ibrim, 12th-13th century Nubian, Brit. Mus. inv. EA.71889, London.)

H3: Ahadi tribesman Since no pictorial evidence is known to survive from sub-Saharan Africa west of the Nile during these centuries, this tribesman is based on detailed descriptions by Arab travellers and geographers, plus later costume and weaponry. (Medieval sources: St. Menas in a 9th-10th century Nubian manuscript, Brit. Lib. Ms. Or. 6805, London; carved capital showing African warriors, 12th century Siculo-Norman, *in situ*, Cathedral Cloisters, Monreale.)

A – Fortified building next to the caravanserai, 8th-9th centuries, al-Rabadah, central Arabia; B – Fortified house, 8th-9th centuries, al-Rabadah, central Arabia; C – The fortified reception hall built in 972, Ajidabya, Libya; D – Restored view of the gate at Harran built in 1059; E – Restored elevation of the gate of Harran showing relief carvings; F – Reconstructed section through the northern gate of Diyarbakir, built by the 'Abbāsid Caliph al-Muqtadir and extensively restored by the Marwānid Amir Abū Naṣr Aḥmad early in the 11th century; G – Reconstruction of the brick-built Ribāṭ-i Malik in Transoxania, 1068 to 1080.