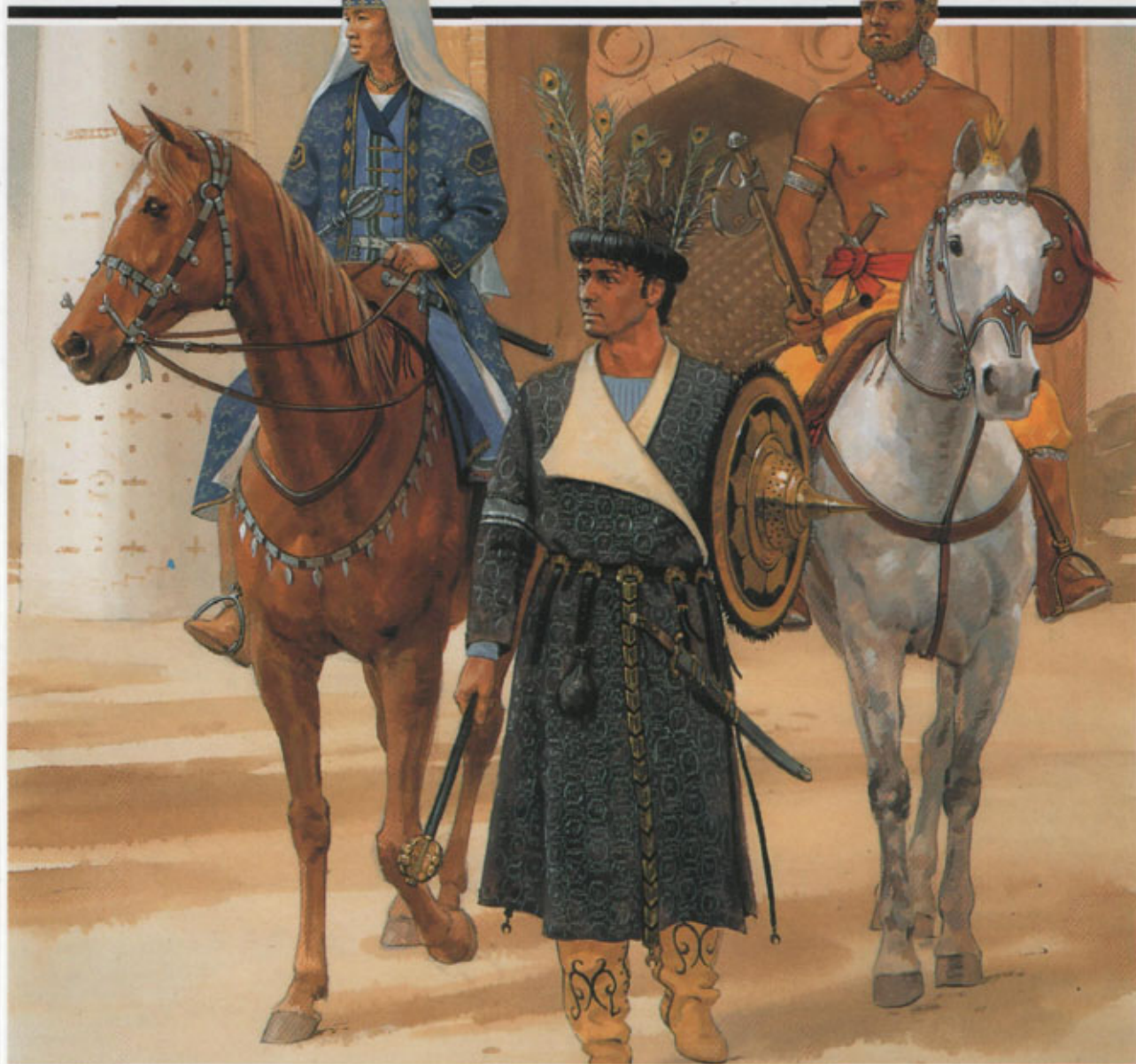


ARMIES OF THE CALIPHATES 862-1098



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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.

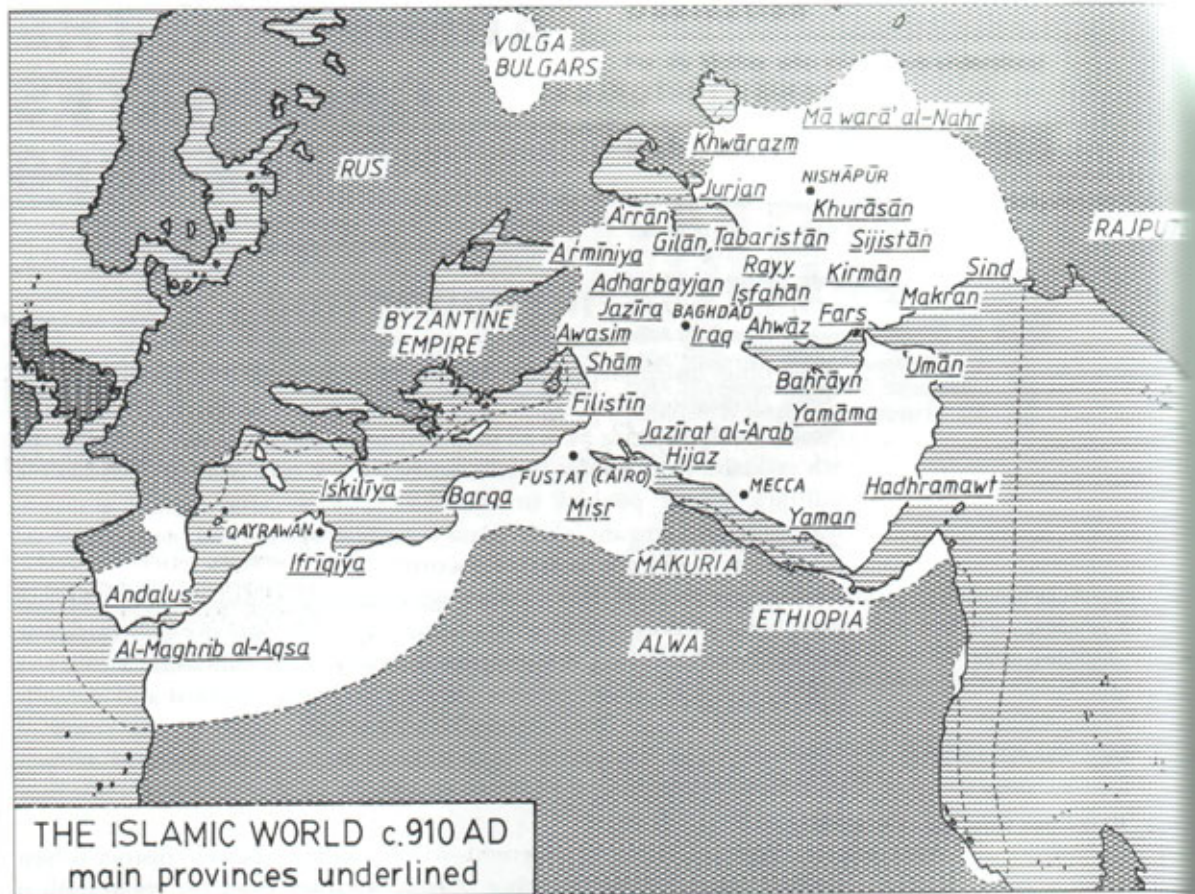
This pattern of history means that medieval Islamic history is best studied on the basis of ruling dynasties rather than on geographical states. Another characteristic feature was the 'Iranianisation' of most armies and a more limited 'Turkification' of their cavalry élites. Nevertheless, many traditional 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.

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

Medallion of the 'Abbāsid Caliph Muqtadir B'illah, Iraq, 9th century. (National Museum, Baghdad)





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

HEARTLANDS AND FRONTIERS

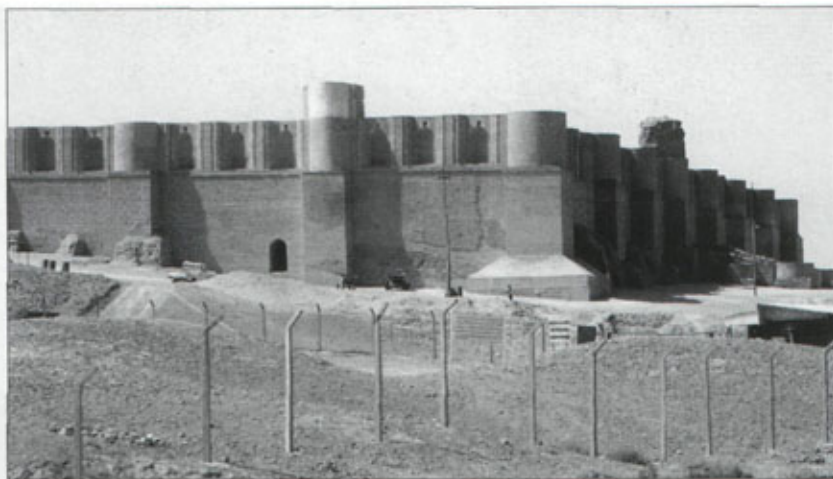
The decline of the 'Abbāsid Caliphate coincided with unrest in many regions and a shift in trade patterns. One result was the decline of Iraq's wealth and potential, and an increase in that of Egypt. A virtual collapse of central authority in 10th century Syria and the Jazīra (Upper Mesopotamia) led to a revival in the power of Arab bedouin tribes who established several small though cultured states close to the Byzantine frontier. In Egypt, as in Syria, Christians still formed the majority of the population, but here civilians took almost no part in warfare. In fact Egypt, Libya and Syria together formed the culturally brilliant, though militarily weak Fātimid Caliphate. Its armies were almost entirely non-Egyptian and increasingly mercenary. Furthermore, they were split between Sunni Muslim Turks, Armenian Christians, Africans (who

political loyalty to the Caliph was personal rather than religious), and several mutually antagonistic groups. Arabia, the cradle of Islam, was, in some ways, now considered a 'frontier' zone. Mecca, Medina and the Red Sea coast were usually under Egyptian authority, while those who ruled Iraq ruled most of the Gulf coast. The centre of the Arabian peninsula was dominated by local tribes and followers of the puritanical and revolutionary Qarmāṭi movement.

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

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

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



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

RECRUITMENT

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 *mamlūks* – 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 Šaffārids (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 'Abbāsīd authority in Syria and the Jazīra 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 'Abbāsīd Caliphate, resident Arab militias had been removed from the *dīwān*, 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 *maxwālīs*, 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 'Abbāsīd Caliphs, creamed off the best Turkish slaves and reduced the flow of *ghulāms* to Iraq to a trickle. The Zīrids of Tunisia (972-1148) also limited the number of Berbers seeking employment in Fāṭimid Egypt.



A

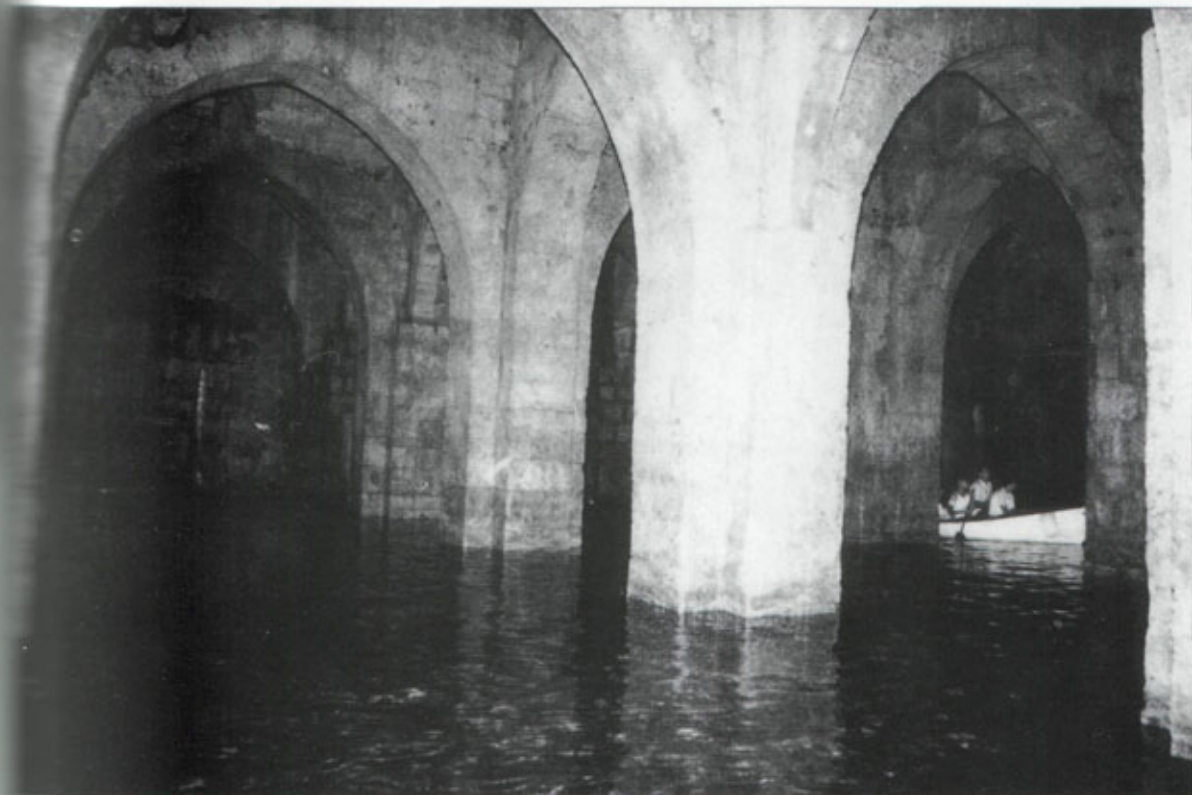
B



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).



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

Turks of slave origin came to be regarded as the best soldiers in most 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 *shamsi* 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 Fāṭimid 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 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)

European slave troops is unclear, since all tended to be called *Rūm*, 'Romans', or *Saqāliba*, 'Slavs' by Muslim chroniclers. One such man, called Labīb the Devout, became an infantry soldier then married his former master's widow. Bitten by a snake and paralysed for a while, Labīb 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 'abid 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 *Sūdānis*, 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 'Abbāsīd Caliphate fragmented, Arab troops who had previously been deleted from the official military registers rose to prominence once again within Arab-speaking areas. *Amsār* garrisons, who had formed themselves into local militias or religiously motivated

he was sold in 1009 at the age of 20 to a Fāṭimid officer called Dizbar. Anushtegin adopted the name al-Dizbarī and for three years held a useful but unexciting administrative position, before being given to the Fāṭimid Caliph al-Hakim as a gift. In the Caliph's palace Anushtegin al-Dizbarī received a complete education before becoming an officer in al-Hakim'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

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

Iranian-speaking Persians, Daylamis, ... and Tajiks had a major military impact in ... 9th to 11th centuries, as the power of the ... (820-872) and Sāmānids (892-999) was ... upon the indigenous minor aristocracy of ... while the second most important group ... the Ghaznavid (962-1186) army were Iranians. ... most renowned were Daylami infantry, ... mountain folk from northern Iran. Their profes- ... or mercenary élite served as mobile ... infantry riding mules or camels, their ... characteristic 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, ... including 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 ... and other necessary kit. He then dressed his hair ... Daylami fashion, ate garlic to give himself bad ... and joined the garrison of Basra.

Other ethnic groups had a much more ... impact. Hindu and Buddhist Indians, for ... example, were enlisted by the Ghaznavids. Brutal ... suppression of the heretical Paulician community of eastern ... Anatolia drove many into supporting local Muslim rulers, most notably ... the frontier Amīr of Malatya. Armenian infantry archers and armoured ... cavalry were also found in Ḥamdānid (929-1003) and Mirdāsīd ... (1023-1079) forces in northern Syria, while others travelled further ... for work, particularly to Egypt where their importance increased ... considerably in the 11th century. Other Christian mercenaries were few ... number, though Fātimid forces included some hired soldiers from ... and western Europe.



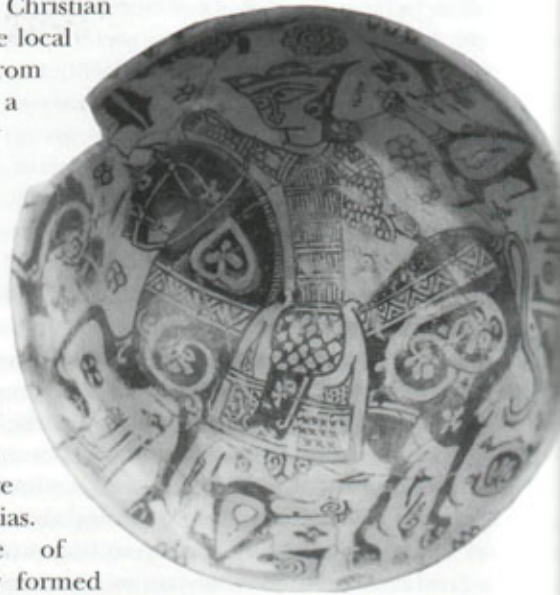
TOP Vaulted audience chamber in the fortress-palace of Ajidabya, Libya, built for the Fātimid Caliph al-Mu'izz in 972. (Libyan Ministry of Antiquities photograph)

ABOVE Wall-painting from Nishāpūr, 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 Mirdāsīd 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 Ṭulūnid 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'īna* 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 *Khārījī* and *Qarmaṭī* movements came under this category. Other frontier irregulars were the *sa'ālīks* who consisted of assorted adventurers who gathered around official and unofficial leaders.

By the 9th century 'Abbāsīd 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 'Abbāsīd *khān al-khayl*, or state stabling system, but again in a more modest way. The 'Abbāsīd 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.

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 Nishāpūr showing a cavalryman with a lamellar cuirass over a long-sleeved shirt. (Museum of Islamic Arts, Sharjah, UAE)

The 'ard, 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 *iqṭā'* 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 *amīr* supposedly led 10,000 men, a *qā'id* 1,000, a *naqīb* 100, and an *'arīf* ten, remained the ideal, but in reality the old 'Abbāsid army had been disbanded by the new *Amīr al-Umāra* in 936. Instead, the new army consisted of regiments under virtually autonomous *amīrs*, 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

Massive tower flanking the entrance to the castle of Hama, first built by the Umayyad Ḥārūn al-Rashīd and strengthened by Sayf al-Dawla in the 10th century. (Author's photograph)



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 difficult to determine how they fitted into the system. For example, *manjanīq*, mangonel-operators, were found within most cities and fortresses, led by an *amīr* and recruited from experienced soldiers. The same may have been the case with *naḡāṭūn*, fire troops. The famous 'Abbāsīd field hospital had declined, but existed in some of the better-equipped 11th century armies.

While 'Abbāsīd traditions remained the ideal, local variations emerged. In Iranian-speaking or influenced regions, pre-Islamic Persian military terms reappeared in the 9th to 11th centuries, such as *sālār* or *siḡah-sālār*, meaning commander, *iṣḡahbadh*, army chief, and *sarḡah*, junior officer. The short-lived Ṣaffāriḡ dynasty (867-903) was self-consciously Iranian, holding its military reviews during the *Navrūz*, Persian New Year. Drums summoned men to parade where they and their kit were inspected, each man being entered in the *dīwān* (list) according to physical description in a manner recalling military parades in pre-Islamic Sassanian Iran. The rival Sāmānīds (874-999) were equally conscious of their Iranian identity, though in their last years a Turkish general took control of the state and adopted the high-flown Arabic title of *amīr al-umāra' al-mu'ayyad min al-samā'* – 'Commander of Commanders with Heavenly Backing'.

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

In the Anatolian *thughūr*, or frontier regions, highly militarised towns had developed within agricultural areas inhabited by warrior-farming militias descended from earlier Arab troops. Tarsus was one such town, and shortly before it fell to the Byzantines in 965 it was described in detail by an Arab geographer. It had two walls, the outer gates being covered in iron, while the inner gates were entirely of iron. The large towers had *manjanīq*, beam-sling stone throwing machines, on top, and middle-sized towers had *'arrāda*, torsion-powered stone throwers. Small turrets were defended by men with crossbows, while the walls were manned by archers. Some towers were inhabited by local residents or volunteers, while others were used as factories. Inside the city some barracks had resident armourers and blacksmiths, or stables with resident vets. Many were financed by religiously endowed properties here and in Syria. Raids were announced on Fridays in the main mosque. Boys spread the message to muster at a particular gate, where banners were given to unit commanders and infantry were attached to cavalry regiments. Each group carried appropriate weapons, including



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

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

The Aghlabid dynasty of Ifrīqiya (800-909) relied upon the old local resident garrisons whom they largely paid in cash. Nevertheless, it was the Aghlabids who introduced the *iqṭā'* system to Sicily following its conquest. A comparable system was used by the Ṭūlūnids in Egypt (868-905), who also built the new military cantonment of Qata'ā' just south of the Fāṭimids' later palace-city of al-Qāhira (Cairo). Ṭūlūnid troops did not, however, remain in barracks all year, but went into the Nile Delta to pasture their horses, the troops being billeted with Coptic families. Another major Egyptian garrison centre was Alexandria, and other units were spread along the coast.

The organisation of the Fāṭimid army (969-1171) is one of the best documented in Islamic history. The force which conquered Egypt for the Fāṭimid Caliph may have numbered up to 100,000 men, but was later reduced to a maximum of 25,000, up to 15,000 of whom were based in Cairo. The original army had been tribally organised, whereas the later one was regimental, these reforms being part of a policy of building a military structure based upon that of their 'Abbāsīd

enemies. Fāṭimid ranking included *amīrs* or *qā'id*s of the First Class, which included *amīrs* of the Necklace, *amīrs* of the Silver Cane and junior *amīrs* without titles of office. The *amīr al-ḥarṣ* was in command of the vital Syrian garrisons, where most later Fāṭimid wars were fought, while the *isfahsalār* was in charge of military ceremonial. Special *dīwāns*, or government departments included the *dīwān al-ḥarṣ* responsible for reviews. The *dīwān al-iqṭā'* supervised 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 Nishāpūr. (Met. Museum of Art, inv. 66.176, New York)

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



important *iqṭā'* system, and the *dīwān al-raḥīq* was responsible for paying the troops eight to twelve times a year. There may also have been a fourth *dīwān* in charge of military pensions, all of which seem to have been run by Christian clerics. To make things more complicated, payments differed depending on whether the unit in question was an élite regiment, a garrison force assimilated into a local population, the moveable garrison of a castle, or merely a semi-regular tribal force. *Iqṭās* were often associated with a specific number of peasants rather than a piece of land, and other *iqṭās* consisted of marginal land on the desert fringe, allocated to tribal leaders in return for help in war. Defence of the southern frontier facing Nubia was largely delegated to the local Kanz al-Dawla dynasty by the early 11th century. Like the Buwayhids, the Fāṭimids relied on a system of patronage to cement military loyalties.

An inadequate performance on the battlefield was to some degree balanced by amazing ceremonies back in Cairo, where military parades were used as a way of projecting Fāṭimid prestige. These were so important that special arsenals were created for flags, tents, decorated weapons and horse harnesses, uniforms, musical instruments, books and Caliphal regalia, in addition to ordinary arsenals for arms, armour, harness and food supplies.

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

WEAPONRY

Élite cavalry were often heavily armoured and used horse-armour; the subsequent willingness of Islamic cavalry to fight the First Crusade in close quarters suggests confidence in their own armour. Talismans and amulets were also important, particularly among soldiers, since there was widespread belief in magic.

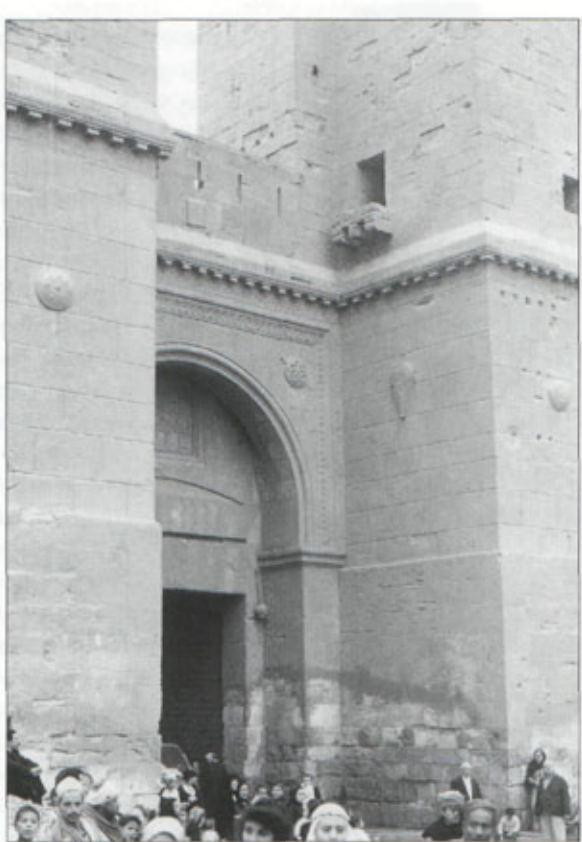
which was itself divided into the 'good' and the bad, the lawful and the unlawful.

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

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

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

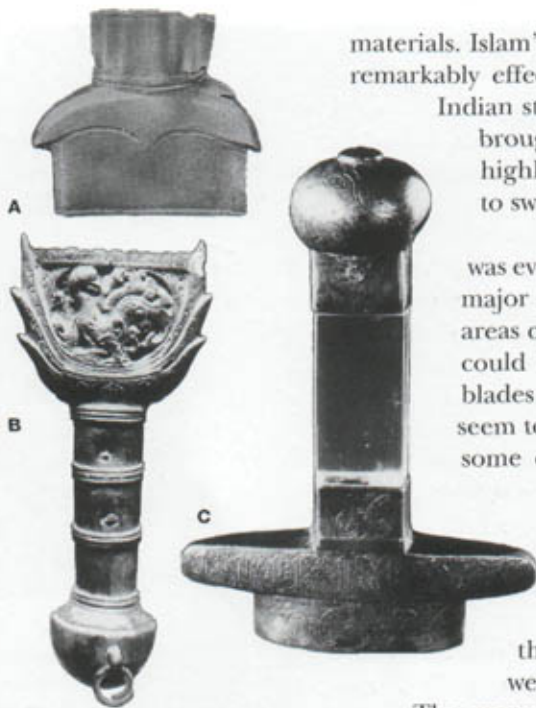
Trade in military equipment involved trade in raw materials, especially as the main iron resources of the Islamic world lay either close to the frontiers or beyond them. As a result governments took a close interest in trade in strategic



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)





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.).

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).



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 harnesses was even more complex. Military equipment was made in many 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.

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 *qarājūliya*, 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 *yāfrūt*, 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 based his work on earlier Fātimid traditions. He stated that the *qunṭariyah* was a standard cavalry weapon which could be used in the same pitched manner as Crusader knights. The *ḍarīyah* or *ṣarīyah* 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 *zūpīn* of Damascene foot soldiers, whereas the *khisht* used by Arab bedouin infantry was a lighter javelin. The *ḥarjīyah* or *ḥaranjīyah* was another obscure javelin or spear used by Fātimid armies. Its name might indicate an *ifranjī*, or 'European', origin which would suggest that it had European-style wings or wings below the blade.

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 *latf*, 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 *ṭabarzīn*, or 'saddle-axe', with a relatively small head and a mallet 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 angled they stored no energy and indeed wasted

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





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 smooth recurved Turkish form was normally thicker, shorter and capable of storing more energy, but demanded greater strength from the man using the bow.

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

The *ḥusbān*, or 'arrow-guide', has sometimes been confused with early references to crossbows. The first reference to proper hand-held crossbows, called *qaws al-rijl* or 'foot bows', was among 'Abbāsid infantry in the second half of the 9th century. The frame-mounted type were used by 'Abbāsid soldiers in open

battle in the late 9th century, while large and small crossbows were used in the Islamic Middle East during the 10th century. Among them the original *jarkh* or *charkh* was spanned by a windlass and shot arrows the size of javelins. The crossbow used by 11th century Fāṭimid Egyptian marines incorporated an early Arab form of bow and was powerful enough to shoot small bottles of *naft*, or 'Greek Fire'.

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

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

In contrast, the armour worn by Islamic warriors changed little, though the ability to forge iron helmets became widespread from the 10th century onwards. Helmets made of two or three pieces of iron, with or without a reinforcing rim, continued to be used, but the development of a fluted helmet whose corrugated surface afforded greater strength without increased weight stemmed from the ability to forge iron helmets and probably first appeared in the Islamic Middle East in the 11th century. Otherwise, a warrior protected his neck and shoulders with a hood-like mail coif or a mail aventail suspended from the rim of his helmet.

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

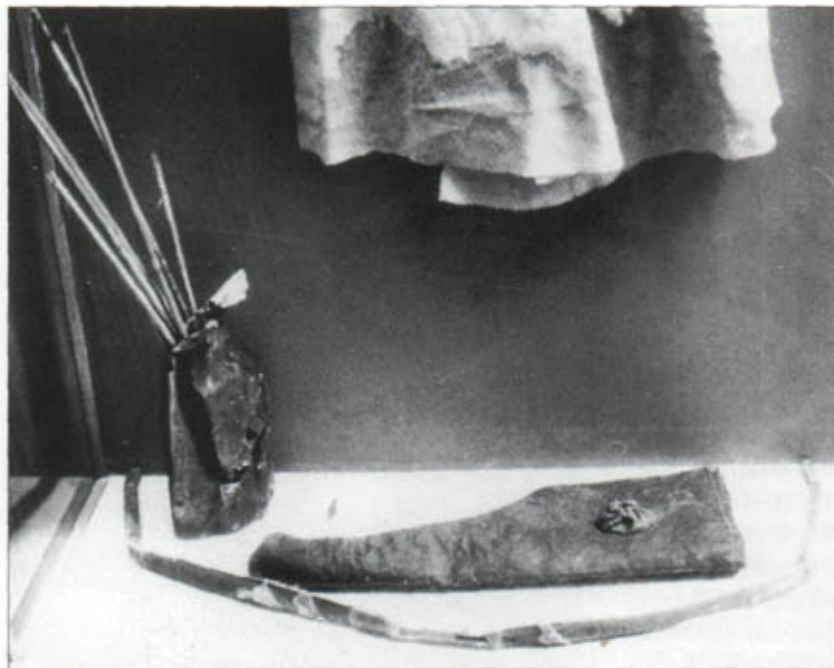
Limb defences seem to have largely been abandoned during the 10th century, perhaps because a greater variety of shields came into use, including a new flat-based but essentially tall kite-shaped mantlet called *shazwiyāh*. This was used by ranks of infantry against arrows and its name suggests a European Genoese origin. The *lamṭ* was another large and distinctive shield made of layers of leather which originated among the Saharan Berbers.

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

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



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



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)

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

Various fabrics were available. Cotton had been grown in the Middle East since pre-Islamic times, linen was produced in Egypt, Syria and Tunisia, and the manufacture of silk increased considerably. Wool was, of course, universal. Surviving textiles show considerable variety in dyeing and embroidery, though the dyes themselves remained extremely expensive. The most distinctive form of Islamic costume decoration was the *ṭirāz*, or inscription worn on the sleeve. It originally had a cooling function, and the wording of a *ṭirāz* normally consisted of the *B'ismallāh* or Invocation of God followed by blessings for the Caliph and some titles, while the surrounding decoration could range from the magnificent to the rudimentary.

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

Central Asian inspiration were soon to be found as far away as North Africa. The most common form of cavalry saddle was similar to that of Central Asian origin from *Khwārazm*, a region south of the Aral Sea. It was broad and somewhat flat with a slightly raised pommel, two girths and a breast strap.

COSTUME AND UNIFORMS

Islamic costume was more functional than formal. Differentiation was made



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 tawila* ('long *qalansuwah*') was taller, and sometimes nicknamed a *danniya* because it looked like a *dann* wine jar. The *qalansuwah shāshīyah*, or simply *shāshīyah*, 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 Nishāpūr. (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 *tabarzīn* 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 Ṭulūnid 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

consult his colleagues and military experts, to maintain the loyalty and discipline of his troops, were fully recognised. Different tactics were employed depending on whether the enemy was strong or weak, and the selection of suitable camp sites in hostile territory was a major concern. The mobilisation, review and the protection of a baggage train. Raiding by day and night was a favourite strategy, while considerable emphasis was laid on defensive and offensive siege warfare.

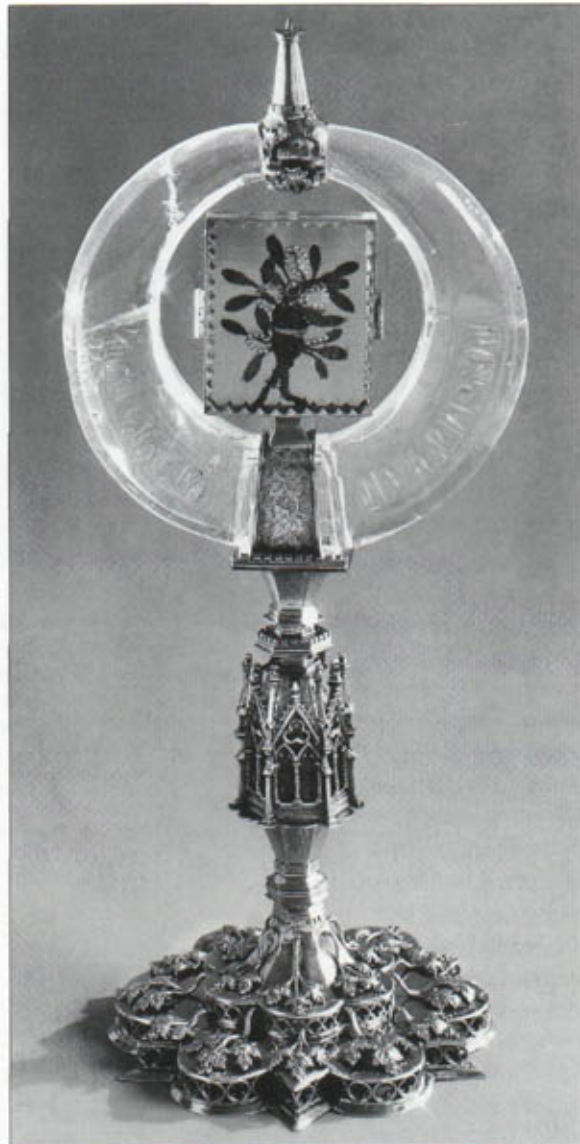
Elite *ghulāms* served as shock cavalry and relied on a compact charge. Lighter harassment tactics predominated in the Arab armies of 10th-11th century northern Syria, and by operating in small fast units they were quite capable of defeating larger Byzantine forces. Kurdish cavalry seem to have been more heavily armoured, but a lack of horse-archers among both these peoples led to their defeat by invading Turks in the 11th century.

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

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

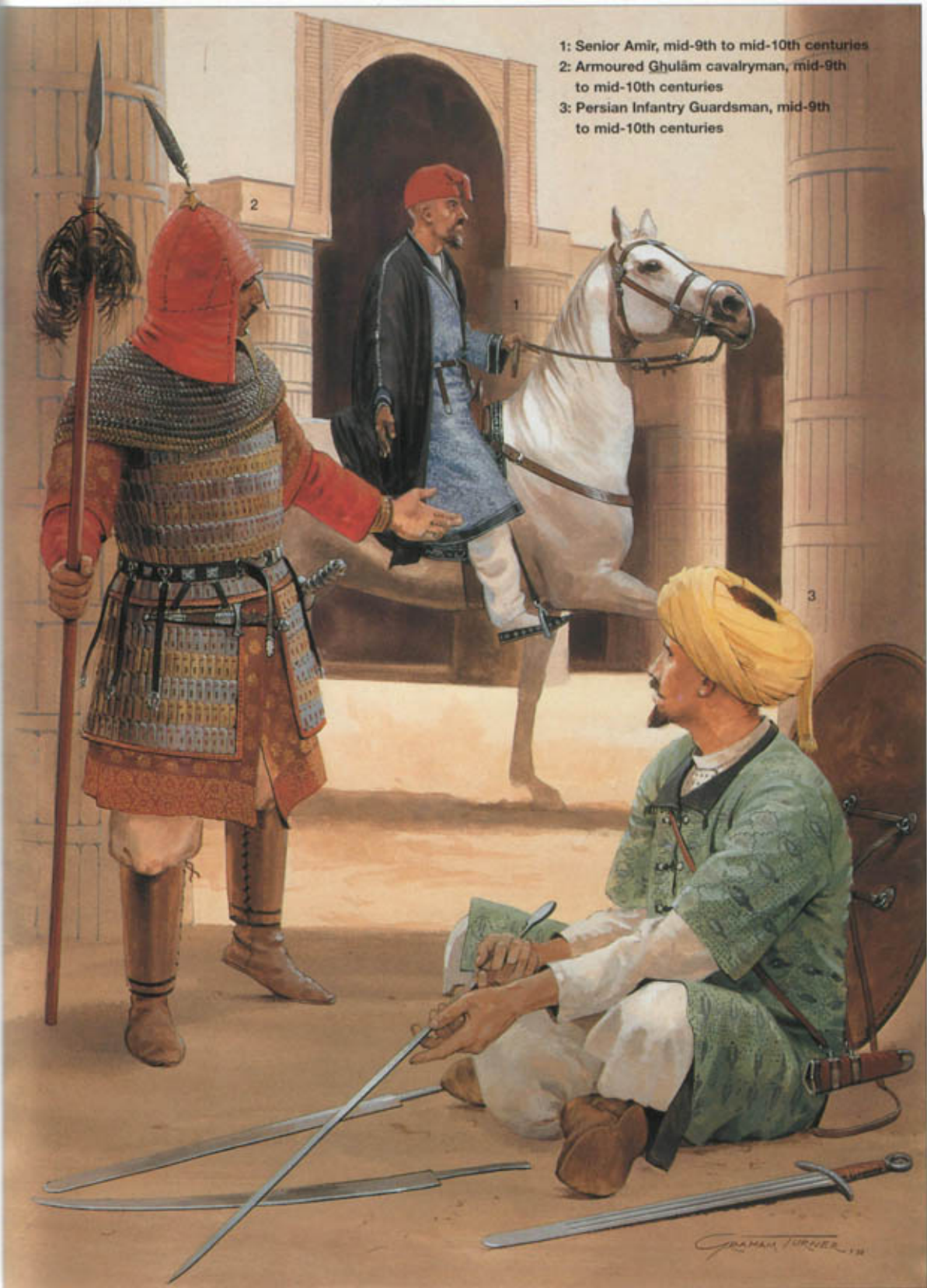
Battlefield tactics remained essentially the same as those developed in the 8th century. *Ta'biya* close formations stood within the traditional five-fold *khamis* of a centre, vanguard, rearguard and two flanks. Lightly armoured cavalry formed the vanguard. Heavy cavalry, flanked by infantry archers and followed by other infantry, formed the centre along with the baggage train, hospital and other support services. Flanks and rearguard were probably similar, while any siege train came behind. If an army was attacked before it was ready, its infantry had to kneel and use spears as pikes while defending themselves with large leather shields until their cavalry could counterattack, although this was recognised as difficult for inexperienced troops. If the army was ready, its infantry remained standing and held their spears against the upper part of their chests, supported by archers who shot at close range, while cavalry only intervened if the infantry wavered. Cavalry were also trained to fight on foot, and the tactic of horse-archers dismounting and shooting from a kneeling position having emptied their quivers on the ground before them probably dated back to this time.

When drawing up an army in battle array, it was considered best to have hills at the rear or to establish concealed ambushes to protect the army's back. It was best to place the centre on raised ground or to have the right flank raised. In any case, the commander should be on whatever high ground was available, and if this was not possible he should build a raised wooden structure or ride on a camel or elephant. It was best to fight when dust and sun were in the enemy's eyes and if one's own cavalry had dust on

their faces they should dismount. Ideally each unit was in five lines, the first two fighting, the third protecting that unit's baggage, the fourth consisting of light troops covering the baggage and the fifth serving as rearguard. Overall, the battle array would be in crescent shape, not necessarily with its wings pushed forwards, but with the centre more numerous than the flanks. They should also have made a *zariba*, a temporary field fortification of baggage and animals, in case they had to retreat. *Mubārizūn*, 'champions', often duelled between opposing forces before a battle began, but were urged not to pursue a defeated foe more than two-thirds of the way towards the enemy line in case they got cut off.

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

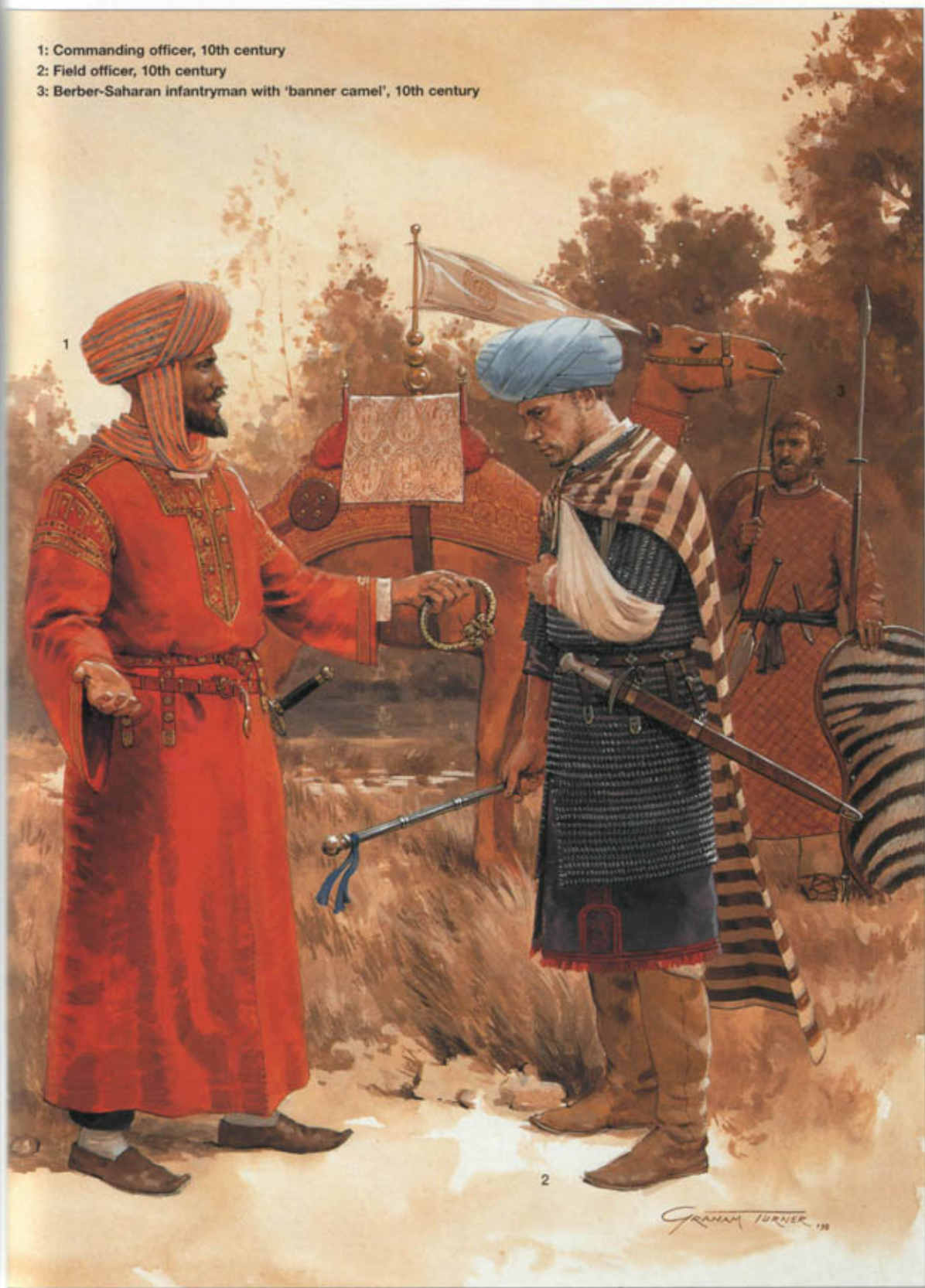
- 1: Senior Amir, mid-9th to mid-10th centuries
- 2: Armoured Ghulām cavalryman, mid-9th to mid-10th centuries
- 3: Persian Infantry Guardsman, mid-9th to mid-10th centuries

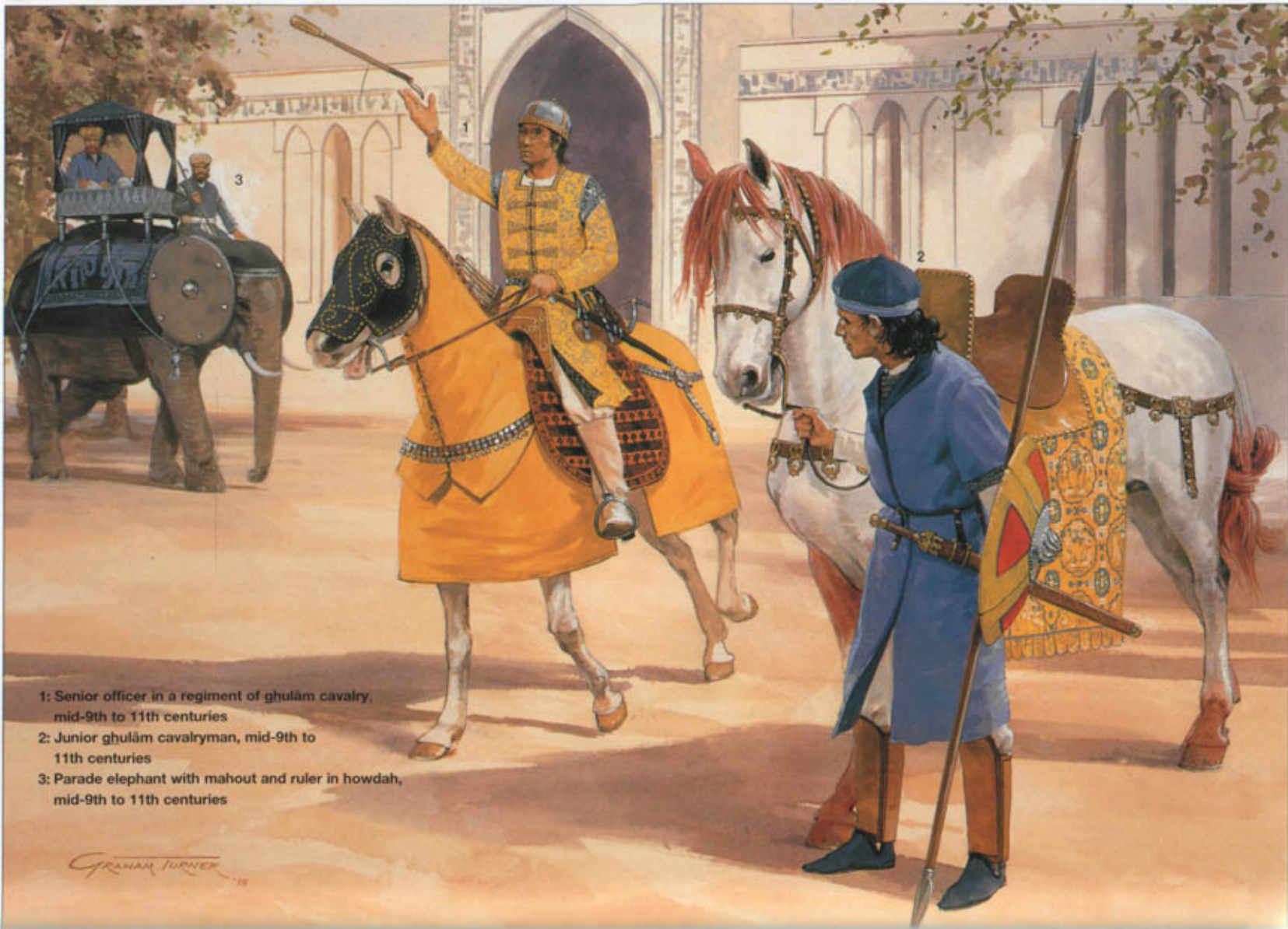


- 1: Sughdian Naffāṭah 'fire trooper', late 9th and 10th centuries
2: Khurāsānī Cavalryman, late 9th and 10th centuries
3: North Iranian foot soldier, late 9th and 10th centuries



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





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

Caroline F. E. Spurgeon



1: Marine crossbowman, 11th century

2: Palestinian infantry archer of the local Aḥdāth, 11th century

3: Fāṭimid infantry guardsman, 11th century

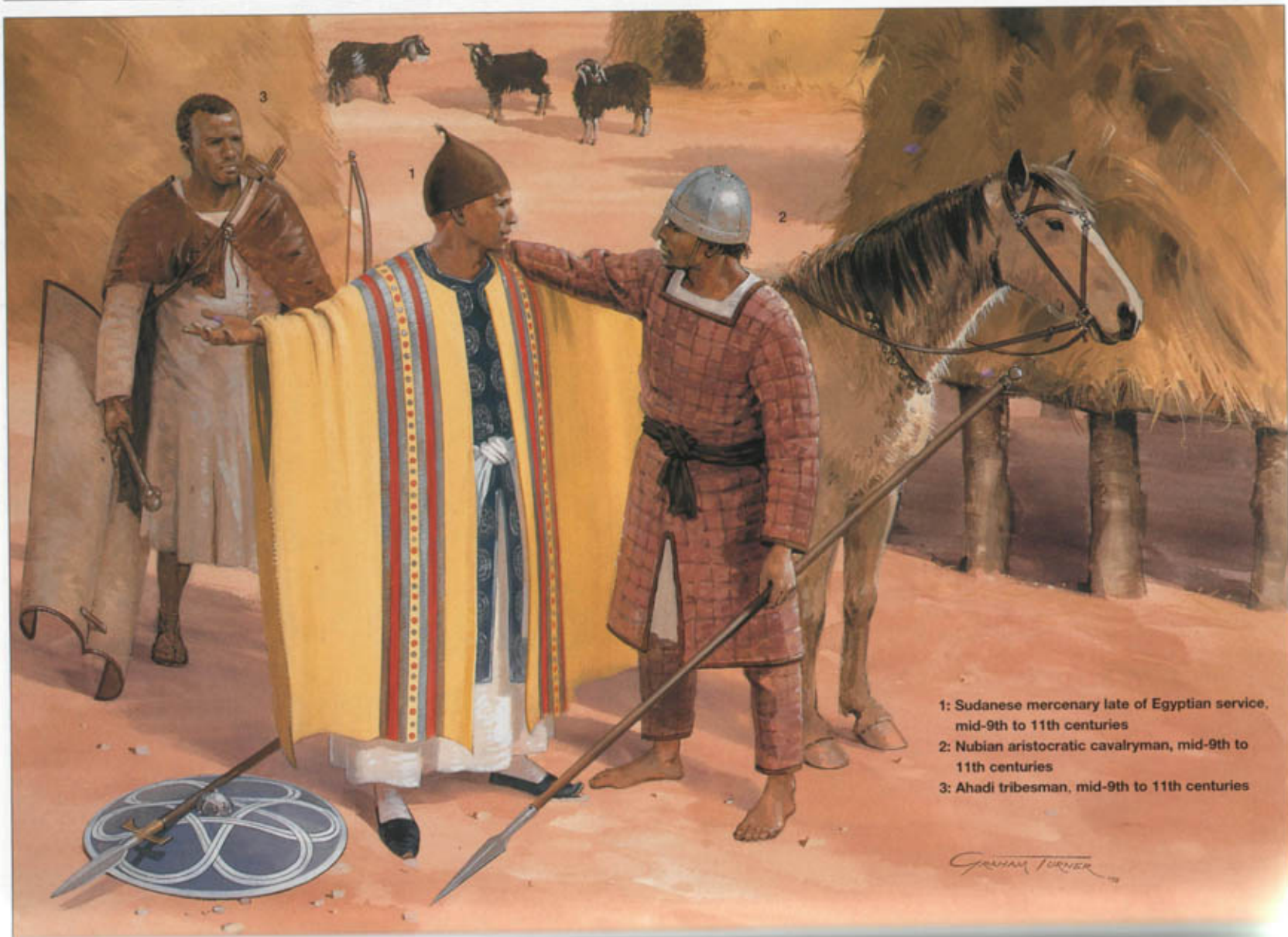
1: Ghaznawid bodyguard, late 10th and 11th centuries

2: Qarakhānid cavalryman in ceremonial costume, late 10th and 11th centuries

3: Indian mercenary cavalryman, late 10th and 11th centuries



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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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advanced, it did so with infantry ahead of cavalry and should not be more than one-third of the way to the enemy's main position. The pursuit of a routed foe was similarly restrained, since feigned flight was often used to lure an enemy into a vulnerable position. Normally the attack was done by the flanks, with the centre following up more slowly while the infantry protected the cavalry from enemy horsemen. The total destruction of an enemy was to be avoided as this only provoked fiercer resistance. Élite cavalry were also used for reconnaissance with the best horses and only wearing a mail hauberk rather than a heavier lamellar harness. Above all, scouting parties must avoid raising dust or falling into enemy ambushes.

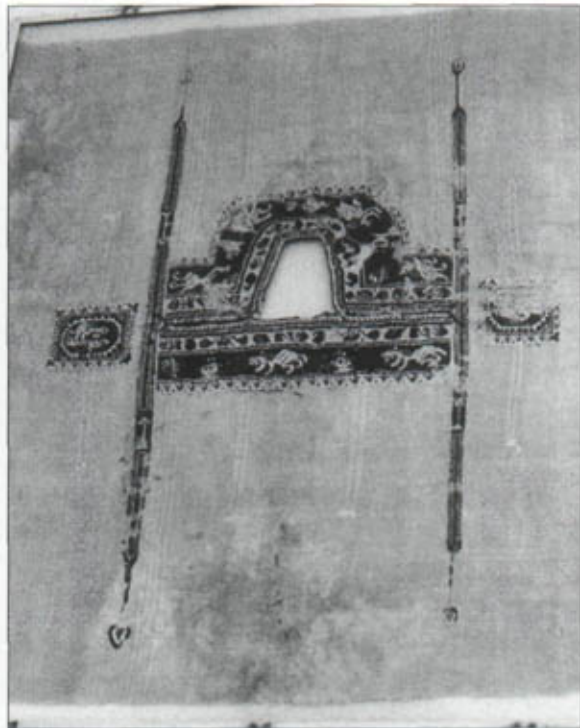
Buwayhid armies gave a more prominent role to Daylami infantry and tended to put these men on the defensive left flank, while Turkish *ghulām* cavalry were concentrated on the traditionally offensive right flank. Otherwise, Daylami tactics were to advance in a solid unbreakable line behind its shields, then make a final charge with *zūpīn* javelins and spears. Various detailed descriptions of battles indicate the strengths and weaknesses of such tactics. When fighting for control of a strategic bridge in 957, for example, one side relied on repeated charges by *ghulām* cavalry, while the other relied on Daylami infantry in defensive positions. The former almost lost the battle when they ran out of arrows, but when a mix-up in communications led to a charge by supposedly 'inferior' troops who broke through the tired *ghulāmis* then attacked them from the rear. A few years earlier an 'Abbāsīd commander placed *naffātūn* flame-thrower troops ahead of his front line, but the wind changed, blowing smoke back against his own men, and the *naffātūn* were then killed by archers.

The *Shāhnāmāh*, written for a Sāmānid ruler, described how war elephants formed up to the rear of armoured cavalry who were themselves behind rows of infantry. Elsewhere, the *Shāhnāmāh* states that cavalry protected the elephants with archers on their backs, while infantry with large crossbows went ahead and foot soldiers with long spears came behind. The Ghaznavids made greater use of war elephants, not only as mobile command posts, but having men armed with spears and bows either riding or strapped to their backs, or using elephants as battering rams.

Smaller Islamic armies in the Middle East had to use whatever was available to them. In 927/8 a *Qarmaṣī* leader had an '*ammāriyah*, 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 century Kurdish leader fooled an enemy into backing off from a direct assault by sending herds of cattle onto the hilltops with a few infantrymen among them, flashing their swords in the sunlight so that from a distance they looked like a large cavalry force. A few decades earlier the governor of a Caucasus town mounted local civilians on any available four-legged creature so that they also looked like a great army from a distance.

Fāṭimid tactics were essentially the same as those of the 'Abbāsids, and the abundance of surviving information adds details such as the unfurling of banners just before an army marched, the agreement of a battle cry before combat, the morale-boosting speech by a commander before battle and the selection of officers to carry the commander's orders to those in charge of outlying units. The relative lack of archery, particularly horse-archery, in Fāṭimid forces was, however, a constant problem. On the march, units remained beneath their own banners and had their weapons available but were not armoured. Men only donned armour if their

commander expected an attack, and similarly those fleeing the enemy were told to carry armour rather than wear it. A commander was advised to reinforce that side of his column which seemed most vulnerable to attack, or to place scouts all around if he was uncertain where the enemy was. Military pioneers played a major role on the march, positioned behind the scouting parties but ahead of the vanguard to improve roads and remove obstacles. The vulnerability of an army marching through a pass or over a bridge was such that a commander supervised the operation personally. The *nuzūl* (halting or reassembling of an army at the end of a day's march) was another vulnerable time, when infantry were supposed to remain in defensive array while a fortified encampment was erected.

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

The training of professional Islamic troops remained highly structured. *Furūsiyah* meant 'skill', while *shujā'a* meant 'courage'. The famous 'Seven Year Training Scheme' attributed to the Sāmānids was a theoretical ideal rarely, if ever, achieved in practice. Here, the recruit began as a foot groom and concluded as an *amīr*, 'officer'. In reality, regimental leaders seem to have taken over responsibility for training a

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 *Hujariyah*, '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-Tarusi, repeating Fāṭimid or 'Abbāsīd 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 *Shāhnāmāh* 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'. Lasses 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 'Abbāsīd 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 Lukkūm, 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 Jazīra 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 vulnerability 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 Fustāt 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 'Abbāsīd 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 *jāsūs*, '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 Nishāpūr 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 *ribāts* were also supposed to offer shelter and suppress piracy. Naval officers included the *qā'id* or *muqaddam* in command of marines and the *ra'īs*, 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 Fātimid 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 *shini* 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 *ribāts* 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-Futuḡgate 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-skin 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 *lamt* leather shields and quilted armour.

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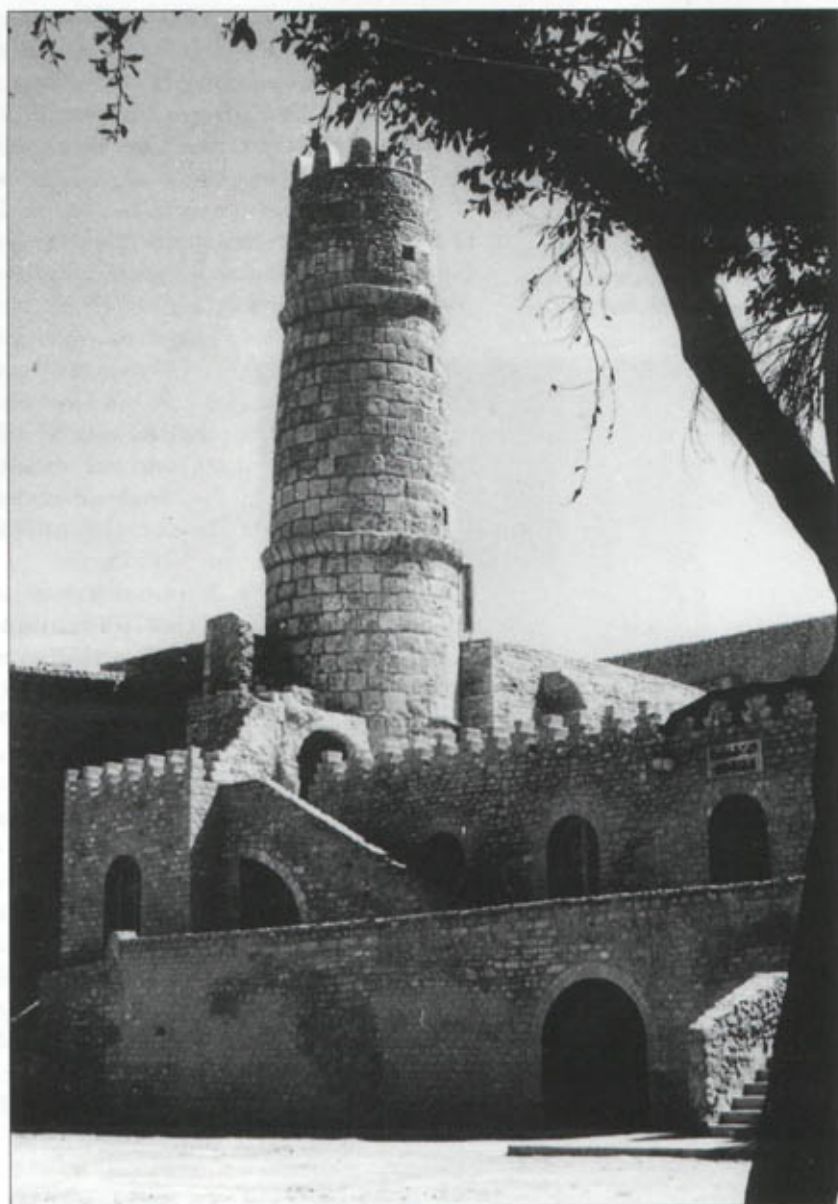
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The interior of the 9th century *ribāf* coastal fortress at Monastir in Tunisia. (Author's photograph)



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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 *ribât* at Monastir in Tunisia. (Author's photograph)



THE PLATES

A: 'Abbāsīd 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 'Abbāsīd dynasty over a silk *khafātān* with embroidered *firāz* 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 *khafātān* over a larger *khafātān*, 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, Tbilisi; carving of an Arab governor, church of the Holy Cross, 9th-10th century, Mtskheta, Georgia.)

B: Sāmānīd 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 and lamellar aventail. (Main sources: Ms. Gr. 1605, Byzantine 11th century, Bib. Nat. Paris; kneeling archer on silk cloth, Iran 9th-11th centuries, Mus. of Art, Cleveland, Ohio.)

B2: Khurāsānī Cavalryman This cavalryman has been given a lamellar cuirass over a long-sleeved mail hauberk which seems to be tucked inside his thickly quilted trousers. The extremely long cloth beneath his saddle was a widespread fashion. (Main sources: 9th-10th century ceramics from Nishāpūr; Motamed Coll., Frankfurt, Archaeol. Mus., Tehran.)

BELOW The gate of the *ribāṭ* at Sūs 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 Nishāpūr, Archaeol. Mus., Tehran.)

E3: 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 Nishāpūr, 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 Fātimid Armies (10th century)

C1: Commanding officer This officer's turban in the *muhannak* style and his Arab *durrā'a* tunic are examples of the Fātimid'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 Fātimid 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 Fātimid 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 *laṭf*, 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 Nishāpūr, Archaeol. Mus., Tehran; horseman on a gold pendant, Iran, 10th century, Art Museum, inv. 1953.70, Cincinnati; pieces of bronze horse harness from Nishāpūr, 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. Phlobammon on a wall-painting from the early 11th century church of 'Abd Allāh Nirqi in Nubia. (Coptic Museum, Cairo)

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 Caliph 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

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 *ṥhawb* 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; *ṥhawb*, 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* Toḡali Kilise, Goreme, Cappadocia; wall-painting, 10th-11th century, *in situ* Bahattin Kilisesi, Peristrema valley, Cappadocia.)

E3: Leader of a Qarmaṯi raiding force The *Ṣhaykh* 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

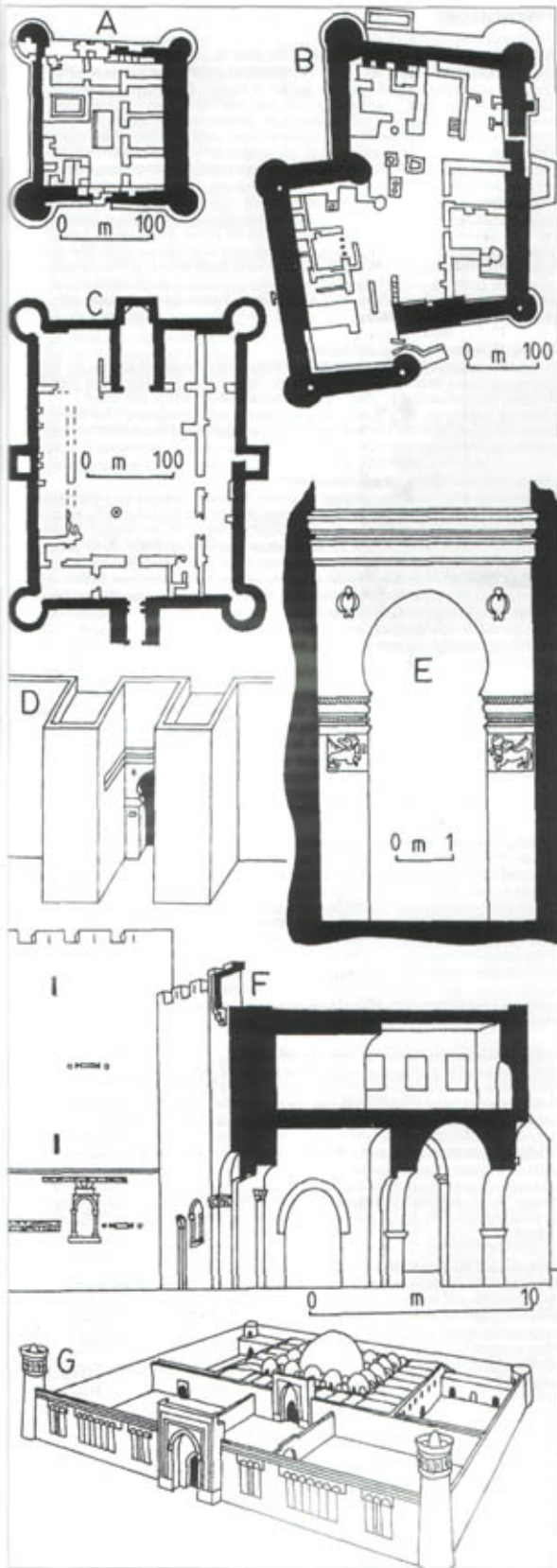
Arab infantry. (Main sources: carved ivory plaque showing an Arab warrior, 10th-11th century Byzantine, Hermitage, St. Petersburg; carved wooden panels from the Fāṭimid Caliph Palace, 11th century, Museum of Islamic Art, Cairo; carved wooden panel from the Church of Saint Barbara, 11th century, Coptic 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 Islam. Kunst, Berlin, Met. Mus., New York; carved wooden panels from the Fāṭimid Caliph Palace, 11th century, Museum of Islamic Art, Cairo.)

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

G1: Ḡhaznavid bodyguard The feathered head-dresses of elite Ḡhaznavid 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 elite status. (Main sources: wall-paintings from Lashkari Bazar, 11th century Ḡhaznavid, 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: Qarakḥānid cavalryman in ceremonial costume Little art survives from the Qarakḥānid 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 Rajasthan, 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 Fātimid '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 'Abbāsīd 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.