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ARMY II. ISLAMIC, TO THE MONGOL PERIOD

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The Arab armies which overran Sasanian Iraq and Iran in the middle decades of the 7th century A.D. comprised essentially the *levée en masse* of the male, free Muslim Arab cavalrymen (the *moqātela*), receiving stipends (*ʿaṭā'*) from the *dīvān* established, probably on Persian models, by the Caliph ʿOmar I, to which was added a tail of soldiers of lesser social status—poor Bedouins, slaves, and already a sprinkling of new converts or *mawālī* (see Mawlā)—who usually fought on foot and received shares in captured plunder only. The number of troops involved in the Iranian campaigns, normally launched from the base of Kūfa in the case of Azarbaijan, Arrān, and Jebāl, and from that of Baṣra in the case of Ahvāz, Fārs, Kermān, and Khorasan, can not have been more than a few thousands, e.g. the 4,000 troops sent with Zīād b. Abīhi into Fārs and Kermān in 39/659-60 in order to suppress an anti-taxation rebellion there (Ṭabarī, I, p. 3449; other figures for armies in Spuler, *Iran*, pp. 485-86). Regarding the tribal composition of the Arabs in Iran, North Arabs (Tamīm, Bakr, Rabīʿa, etc.) seem to have been numerically preponderant over South Arabs (Azd, Maḏḥeǰ, etc.; cf. M. A. Shaban, *The ʿAbbāsid Revolution*, Cambridge, 1970, pp. 24-25). The number of Arab troops in the garrison towns of Iran continued to increase during the Omayyad period, so that during Hešām's

caliphate (105-25/724-43), for instance, the Arab army in Khorasan comprised 15,000 longer-established Arab troops and Iranian *mawālī*, plus 20,000 new troops brought in from the *amṣār* of Baṣra and Kūfa (ibid., p. 117).

From the outset, elements of the Iranian imperial troops, facing the relentless pressure of the Arab invaders, had given up the struggle and gone over to the Muslims. After the battle of Qādesīya (q.v.; probably in 15/636), some 4,000 troops of the imperial guard (*ǰond*; *šahānšāh*) had joined the Arabs (Balāḏorī, *Fotūḥ*, p. 280), and over the next two or three decades, colonies of former Sasanian troops, the *asāwera* or "cavalrymen" (apparently, ultimately of Indian origin) and archers from Bokhara settled in the garrison city of Baṣra as *mawālī* (Ch. Pellat, *Le milieu baṣrien et la formation de Ǧāḥiẓ*, Paris, 1953, pp. 36-37; cf. also, R. N. Frye, *The Golden Age of Persia: The Arabs in the East*, London, 1975, pp. 61-62). The pace of conversion to Islam among such Iranian *mawālī* accelerated during the Omayyad period, and, moreover, the permanent settlement of Arabs in the Iranian garrison towns like Qazvīn and Marv gradually transformed the ethnic composition of the Muslim army of occupation in Iran. The troops who made the ʿAbbasid revolution in 129-32/747-50 seem to have had a core of Arab tribesmen, many of whom had been settled in the towns of Khorasan for a considerable time, together with a substantial following of local Iranians (see Shaban, op. cit., pp. 155ff.), but to disentangle ethnic origins on a basis of the onomastic of participants or leaders in the revolution is, as E. L. Daniel has observed (*The Political and Social History of Khurasan under Abbasid Rule 747-820*, Minneapolis and Chicago, 1979, pp. 30-36), "fiendishly problematic." At all events, the *Ḵorāsānīya*, the *ahl al-dawla* of early ʿAbbasid times, were clearly an ethnic amalgam, from whom were to emerge the *Abnāʾ al-dawla* who settled in Baghdad and were to hold key military positions in the ʿAbbasid empire as far afield as the Maḡreb, Yemen, and Transoxania (see P. Crone, *Slaves on Horseback: The Evolution of the Islamic Polity*, Cambridge, 1980, pp. 65-67).

The military tactics and weaponry of these troops in Iran were basically the same as those of Islamic troops elsewhere in the Omayyad and early ʿAbbasid empires. Deployment of troops in the field was by parallel ranks (*ṣofūf*), with the five-fold battle-order of a center, right wing and left wing, supported by a rearguard and an advance guard of skirmishers and scouts (the so-called *ḵamīs* formation); in Sasanian practice, the center of such an army had often been strengthened by a force of war elephants, but these beasts did not re-emerge as a feature of Islamic Iranian military practice till Ghaznavid times

(see below). Favored weapons were those standard ones of sword, lance, and bow, the composite bow becoming increasingly used as peoples from the steppe fringes of Central Asia entered the army (see on this process, below). More specifically Iranian, with their use figuring prominently in the national epic (cf. Nöldeke, *Das iranische Nationalepos*, 2nd ed. Berlin and Leipzig, 1920, p. 57), were the club or mace (*gorz*) carried by mailed cavalrymen, the lasso (*kamand*), and the battle-axe (*tabarzīn*). When from the 3rd/9th century onwards, Daylami infantrymen began to form an appreciable element of Iranian armies (see below), we hear of their characteristic painted shields and two-pronged short spear (*ʿūpīn*; Arabic equivalent, *mezrāq*) which could be used either for thrusting or for hurling at the enemy like a javelin (see on this weapon, C. E. Bosworth, "Military Organization under the Buyids of Persia and Iraq," *Oriens* 18-19, 1965-66, pp. 149-50). The crossbow and similar mechanically-drawn bows or contrivances for firing arrows through a tube (*nāvak*, *čarḵ*) seem to have been known in Iran by the beginning of the 5th/11th century (pace the assertion of K. Huuri, *Zur Geschichte des mittelalterlichen Geschützwesens aus orientalischen Quellen*, Helsinki, 1941, p. 118, repeated in Spuler, *Iran*, p. 491, that they were not known till after 1100 A.D.), for Ebn Fondoq mentions soldiers employing these weapons (*nāvakīān*) in regard to events in the Bayhaq region in 396/1005-06 (*Tārīḵ-e Bayhaq*, ed. A. Bahmanyar, Tehran, 1317 Š./1938, p. 51).

The Arab invaders of Iran had speedily learnt the techniques of siege warfare from their contacts with the Byzantines in Syria and Anatolia, and had employed them in Iraq against the Sasanians. At Bahorasīr (Veh/Beh-Ardašīr) on the middle Tigris in 16/637, the Muslim troops who eventually stormed the town "remained before Bahorasīr for two months, bombarding it with mangonels (*manāǰeq*), running up [to its walls] mobile siege-towers (*dabbābāt*) and employing all sorts of equipment (Ṭabarī, I, p. 2427); there were, of course, ancient traditions of expertise in employing these siege techniques among the Iranians themselves, and it had been Salmān Fāresī (q.v.), the *mobaššer* or proto-convert of the Iranians to Islam, who was said to have instructed the Prophet and the Muslims in the art of digging a defensive rampart and ditch (*ḵandaq* < Mid. Pers. *kandag* "something dug") as protection for Medina against its Meccan besiegers in 5/627.

From the early 3rd/9th century onwards, the power structure in Iran began to change perceptibly; direct ʿAbbasid control over the east became increasingly ineffective. Either lines of governors and local potentates arose who might, in

the case of the Taherids and Samanids proclaim their loyalty to the ideal of the Sunni caliphate but who in practice tended towards political autonomy; or else there arose, as in the case of the Saffarids and Buyids, leaders who were motivated basically by personal ambition or sectarian feeling and who explicitly rejected ʿAbbasid authority (see also ʿAbbasid Caliphate). These political trends coincided with, and were indeed hastened by, radical changes in military practices which were to have far-reaching effects in the Islamic East beyond those in the purely fighting sphere and were to affect the ethnic complexion of the regions involved and to transform the landholding and land utilization systems.

The role of the Arab-Iranian Khorasanian guards, whose prowess had enabled al-Maʾmūn to triumph over his brother al-Amīn in the civil warfare of 195-98/811-13, now recedes into the background, and the vestiges of the *dīvān* system and the *ʿaṭāʾ* disappear. Al-Moʿtaṣem (r. 218-27/833-42) is credited with being the first caliph to purchase on a large scale Turkish slave soldiers (*ḡelmān*, *mamālīk*) and to form them into a personal guard around himself at his capitals Baghdad and then Samarra, but his father Hārūn al-Rašīd had already begun the process (cf. Levy, *The Social Structure of Islam*, pp. 416-l9). The increased economic prosperity of the caliphate, above all in its central and eastern lands, placed in the hands of the caliphs and of provincial rulers in Iran extensive liquid financial resources with which they could acquire these slaves from the Central Asian steppelands, with powers like the Taherids and Samanids acting as intermediaries in this slave trade. It was now possible to replace the old local and tribal levies with a professional, standing army, the troops of which were paid either cash salaries (*razqa*, *rūzī*, *bīstgānī*) out of taxation gathered by the central or provincial treasury or else, latterly, when political control by these rulers became relaxed and the inflow of revenue decreased, by assignments of taxation to be collected personally by the grantee or his agent (*eqṭaʿ*).

The Turks now became regarded in the Iranian world and elsewhere as the martial race *par excellence*, inured to hardship from their tough background of life in the steppes, and, in theory at least, able to give a single-minded loyalty to their patron or sovereign of an intensity which troops with local attachments could presumably never give. Hence over the next centuries, the highly-mobile Turkish archer and his horse became familiar figures, even for rulers who had a nucleus of indigenous fighting men at their disposal; thus the Buyids, from Daylam in northern Iran, had to supplement their own Daylamis,

with the Turkish element of far-ranging cavalrymen required for swift thrusts across the Iranian plateau (see on these general trends, Levy, op. cit., pp. 420ff.; Bosworth, "Barbarian Incursions: The Coming of the Turks into the Iranian World," in *Islamic Civilisation* 950-1150, ed. D. S. Richards, Oxford, 1973, pp. 3-10; idem, "Recruitment, Muster, and Review in Medieval Islamic Armies," in *War, Technology and Society in the Middle East*, ed. V. J. Parry and M. E. Yapp, London, 1975, pp. 61ff.

The Samanids of Transoxania and Khorasan were particularly well-placed for drawing slave manpower from adjacent Inner Asia, and as early as the opening years of the 4th/10th century, the top commands in their army were held by Turkish generals, who were later to play a maleficent role, as they had already done in the ʿAbbasid Caliphate, as king-makers. The splendor of the arms and equipment of the guards of the Samanid regular army is mentioned in the sources, and we further know that this military machine was directed from the capital Bokhara by a department of the army (*dīvān al-ǰayš*) with complex mechanisms for recruitment, registration, payment, etc., of the troops, based on a comprehensive, so-called "black register" (*al-ǰarīda al-sawdāʾ*). See Bosworth, "An Alleged Embassy from the Emperor of China to the Amīr Naṣr b. Aḥmad: A Contribution to Samanid Military History," in *Yād nāma-ye Īrānī Mīnūrskī* (*Minorsky*), ed. M. Mīnovī and Ī. Afšār, Tehran, 1969, pp. 17-29; idem, "Abū ʿAbdallāh al-Khwārazmī on the Technical Terms of the Secretary's Art . . . ," *JESHO* 12, 1969, pp. 125-29, 143-47.

The use of Turkish troops as the professional striking force of a state able to exert a new degree of coercion against internal dissidents and external foes alike finds its apogee in the Ghaznavids of Afghanistan and central and eastern Iran. Although the Ghaznavid army was, like many armies of its age, a polyethnical one, with Arabs, Kurds, Daylamis, Tāǰīks, Afghans, and Indians—some of these being employed for specialist tasks like the Daylami élite infantry and the Arab cavalry scouts and skirmishers—the mainstay of the army was the Turkish slave element, within which was an élite palace guard, the *ḡolāmān-e sarāy*; the literary evidence for the splendid brocade uniforms and bejeweled weapons of this guard—including the mace, short spear, and bow—seems to be confirmed by the remarkable mural paintings surviving at the Ghaznavid palace of Laškarī Bāzār (q.v.) near Bost in southern Afghanistan (see D. Schlumberger and J. Sourdel-Thomine, *Lashkari Bazar: Une résidence royale ghaznévide et ghoride*, *MDAFA* XVIII (*Planches*), Paris, 1978, pls. 121-24). Another characteristic weapon of the Ghaznavid soldiery

was the *qalāčūr* or long, curved sword, but perhaps the most notable innovation of this dynasty for Islamic military practice was their reintroduction, able as they were to draw on the resources of northern India, of war elephants for stampeding in battle, thus terrifying the enemy; there were stables for them (*pīl-ḵāna*) in Ḡazna, and as many as 1,670 of them were reviewed by the sultan at Ḡazna in 422/1031. These beasts could also be used for hauling heavy siege equipment, and we hear of their being fitted with rams for battering down walls and defenses in operations in central Iran in 424/1033. See Bosworth, "Ghaznevid Military Organisation," *Der Islam* 36, 1960, pp. 37-77, largely subsumed in *The Ghaznavids*, pp. 98-128.

Every provincial dynasty which arose in Iran with the shrinkage of the ʿAbbasid caliphate's authority eventually had recourse to Turkish slave troops as a significant element of their fighting forces, but some of these dynasties rose to power, at least initially, with backing from local or tribal supporters. The Saffarids of Sīstān were at first backed by *ʿayyār*s or urban defense bands of that province; by the former opponents of the *ʿayyār*s, the local Kharijite sectaries, who had eventually rallied to Yaʿqūb b. Layṯ; and by free troops, *azādāgān*, from the landed classes there. But very soon, Yaʿqūb and his brother ʿAmr (q.v.) acquired a Turkish slave guard, the choicest elements of which were fitted out with high-quality arms and equipment captured from the Taherid treasuries at Nīšāpūr (see Bosworth, "The Armies of the Saffarids," *BSOAS* 31, 1968, pp. 534-54). The Buyid *amīr*s, themselves of Daylami or Gīlāni stock, came to prominence as soldiers of fortune in that period of Iranian history characterized by Minorsky as "the Daylami interlude" (i.e. between the decline of the ʿAbbasids and the mass incursions of Turkish tribesmen under the Saljuqs and their successors), supported by the Daylami mountaineers, already famed as mercenary soldiers since Sasanian times. Their characteristic weapon, the *ʿūpīn*, has already been mentioned, and the sources also record a particular battle tactic of theirs, that of advancing on the enemy with a solid wall of shields, from behind which they employed their spears and battle-axes. See Bosworth, "Military Organisation," pp. 143-67; H. Busse, *Chalif und Grosskönig: Die Buyiden im Iraq* (945-1055), Beirut and Wiesbaden, 1969, pp. 329-52.

The two great Turkish tribal powers which erupted into the Iranian world in the 4th/10th and 5th/11th centuries, the Qarakhanids and the Saljuqs, the former taking over Transoxania with the support of their Qarluq followers and the latter leading the Oghuz tribesmen into Iran proper and the Arab

lands further west, triumphed through the momentum of their lightly-armed but highly mobile Turkmen mounted archers, and this mobility was a decisive factor in the Saljuqs' ability to defeat more heavily armed, but more heavily encumbered, conventional armies of the Ghaznavids and Buyids. Thus by drawing the forces of Sultan Masʿūd b. Maḥmūd of Ḡazna into the waterless and fodderless Qara Qum desert at Dandānqān between Saraḵs and Marv in 431/1040, a comparatively modest force of 16,000 Turkmen under Ṭoḡrïl Beg and Čaḡrï Beg was able to defeat a Ghaznavid professional army, which included 100 elephants; and the fortifications and walls of the towns of Iran like Ray and Isfahan did not have to be directly stormed by the Turkmen when the tramplings of their horses and the nibblings of their flocks could devastate the towns' agricultural hinterlands and hamstring their commerce.

Yet within two generations of the Saljuqs' overrunning of Iran, the typical pattern of evolution of Islamic military organization at this period asserted itself: The sultans found that they could not build up a professional, standing army on the basis of wayward, anarchic tribal groups, hence had recourse to a permanent, polyethnical force of slave and other troops—Turks, Kurds, Daylamis, Georgians, etc.—supported by cash salaries or *eqṭāʿ*s (landgrants). It was from his experience with the troops under the Great Saljuq sultans Alp Arslān and Malekšāh that the celebrated vizier Ḵᵛāja Neẓām-al-molk made his recommendations regarding the army: That soldiers from several races should be recruited, in order to avoid an undue preponderance of any one element, with potential rebelliousness as a consequence, in the army; that troops should be paid regularly, in order to avoid discontent (violence and rebelliousness had been endemic amongst troops of the later ʿAbbasids and the Buyids, whose pay had been in arrears); that an élite guard should be maintained at court; but that, despite the now-dominant role of the new, professional forces, the claims of the original supporters of the Saljuq dynasty, the Turkmen, should not be completely set aside (*Sīāsat-nāma*, ed. H. Darke, Tehran, 1340 Š./1961, chaps. 19-20, 23-26, pp. 118-19, 126-31, tr. idem, London, 1960, pp. 96-97, 102-05).

For all these dynasties—whose administrative infrastructures tended in any case to be derived from, or at least strongly influenced by, those of the ʿAbbasid Caliphate—there was a military affairs department (*dīvān al-ǰayš*, *dīvān al-ʿarż*/*ʿāreż*) in the central administration, headed by an official, normally a civilian, called the *ṣāḥeb al-ǰayš* or *ʿāreż*. This official kept the pay rolls and paid out salaries, held periodic inspections of weapons and mounts,

weeded out from the ranks interlopers and substitutes, procured mounts and draught animals, arranged for the commissariat, organized weapon-training and equestrian games and exercises like polo, lance-thrusting at targets, etc. (see Bosworth, "Recruitment, Muster and Review," pp. 69-77). The commander-in-chief of the actual troops was normally a Turk, and held the title of "chief *ḥājeb*" (*ḥājeb-e bozorg*, *ḥājeb al-ḥojjāb*, etc.) or *espahsālār*, lesser commanders having the unqualified title of *ḥājeb*. In Neẓām-al-molk's perhaps somewhat idealized account of the training of *ḡolām*s at the Samanid court, the rank of *ḥājeb* was allegedly only attained after a soldier had passed through the ranks of "tent commander" (*weṭāq-bāšī*) and "detachment commander" (*ḵayl-bāšī*) (op. cit., chap. 27, pp. 133-44, tr. pp. 106-07; cf. W. Barthold, *Turkestan*[3], p. 227). The chain of command in the Ghaznavid army is not known for certain, despite the confident assertions regarding this of M. Nāẓim, *The Life and Times of Sulṭān Maḥmūd of Ghazna*, Cambridge, 1931, pp. 141-42.

It is from the 5th/11th century onwards that the genre of writing treatises on statecraft in Persian develops, such treatises usually containing advice on the organizing of armies and on the art of war. At first, this takes the form of chapters within longer "Mirrors for Princes" by such authors as Neẓām-al-molk and Kay Kāvūs b. Eskandar, containing general admonitions rather than practical directions for deploying troops, but subsequently we get full-length works, such as Faḵr-e Modabber's *Ādāb al-ḥarb wa'l-šajāʿa*, which reflects in particular Ghaznavid and Ghurid practice and which, with detailed information on the conduct of battles and the arrangement of troops, displays a less theoretical and much more practical bent.

Whilst there was an essential continuity with earlier Islamic times in regard to the basic hand weapons used among the dynasties mentioned above and the battle tactics followed by them, one nevertheless notes a technical progression from Buyid times onwards, involving more elaborate, semi-mechanized weaponry and more sophisticated siege techniques. *Naffāṭūn* or hurlers of ignited naphtha, "Greek fire," are not infrequently mentioned in the sources, such techniques being doubtless learnt from the prolonged warfare of the ʿAbbasid armies with the Byzantines, and Alp Arslān during his Georgian campaign of 456/1064 had in his army a corps of these troops, which he used, e.g., against the wooden barricades of the Armenian town of Ānī. Siege machinery became more complex, and this aspect of the art of war reached new heights of refinement in the 6th-7th/12th-13th centuries with the wars in Central Asia and Iran of the Ghurids, Ḵʷārazmšāhs, and Mongols. In particular,

the Mongols developed the use of such machinery to an advanced degree, using impressed or renegade Chinese, Iranians, and even Franks as operators. Jengiz Khan had a corps of *manǰanīqīs* or ballista-operators, the requisite machinery being transported to the site of battle by carts: for the siege of Nīšāpūr in 618/1221, the Mongols are said to have set up 200 mangonels. It is in the time of the Mongols, too, that the multiple-shooting bow (*čarḵ-kamān*) is first recorded in Iran, again by Jengiz Khan at the siege of Nīšāpūr (see M. E. Quatremère's notes to his ed. and tr. of Rašīd-al-dīn, *Historie des Mongols de la Perse* I, Paris, 1836, pp. 132-37, 204-05, 284-92; Huuri, op. cit., pp. 123ff., 180-92).

The Saljuq military forces had thus evolved into a blend of the nomadic traditions of mobile warfare and the slower-moving, professional, slave-dominated army, with the Turkman raiders increasingly deflected to the more open and fluid frontiers in the Caucasus and Anatolia for holy war and simple plunder expeditions, i.e., as *ḡāzīs*; but the coming of the Mongols brought a fresh injection of the traditions of steppe warfare into the Islamic world, one whose immediate effects were to be sharp and savage.

The successes of the Mongol armies in the Iranian world and elsewhere stemmed from a high standard of military discipline and solidarity in battle plus an ability to terrify and demoralize their opponents. Within the Mongols' military practices, one can detect not only an indigenous steppe tradition but also Chinese influences, as in the use of a battle formation comprising a center and right and left wings (employed by the Mongols before any contact with Islamic armies). Noteworthy was the decimal chain of command, the grouping of soldiers in tens, hundreds, and thousands, up to an army division of 10,000 men (Mongolian *tümän*, Pers. *tūmān*), which was to have an enduring impact on the military organization of succeeding eastern Islamic powers, being adopted by, e.g., the Mughals in India. As with the Saljuq incursions two centuries or so before, the numbers of the Mongol troops can not have been outstandingly high; Barthold (*Turkestan*, p. 404) estimated that Jengiz had at his disposal 150,000 to 200,000 men when he in 1219-20 attacked the territories of the Ḵʷārazmšāh, the latter commanding superior but less organized forces.

In the field, the Mongols depended first, on the extreme mobility of their cavalry, the ethnic core of which was Mongol, but contained an increasing proportion of the pagan Turkish peoples of Inner Asia plus contingents from other anti-Islamic allies like the Armenians and Georgians; second, on their acute field intelligence and clever use of such time-honored, but still effective, devices as a feigned retreat followed by a swift return to battle; and third, the

deadly precision of their archery. Not until the Mongols came up against the Turkish Mamluks in Syria and Palestine (e.g., at ʿAyn Jālūt in 658/1260) did they face an enemy who understood the Mongols' tactics and could counter them effectively. For infantrymen, the Mongols pressed into service the conquered peoples, amongst whom were large numbers of Tāǰīks, as they swept through Transoxania and Iran, using them for mass assaults in open battle and at sieges. At the outset, the Mongol troops did not receive salaries, but shared in the rich plunder gained from their campaigns or from forced levies on the subject populations. However, as the more settled and established state of the Il-khanids took shape in Iran, the Mongol army became in effect a standing one, so that more regular pay procedures had to be adopted, at first through the issue of rations and provisions, and then, after Ḡāzān Khan (r. 694-703/1295-1304) had attempted to introduce monetary payments but had failed, increasingly through the issue of land grants, resembling the older Islamic *eqṭāʿs* but in the parlance of the Il-khanids and their epigoni termed *soyūrḡāl* (q.v.) when hereditary, and *tiyūl* (*toyūl*, q.v.) when temporary or for life only (see A. K. S. Lambtor, *Landlord and Peasant in Persia*, London, 1953, pp. 89-90, 96-98, 101-04; G. Doerfer, *Türkische und mongolische Elemente im Neupersischen* I, Wiesbaden, 1963, pp. 351-54, II, Wiesbaden, 1965, pp. 667-69). The original weapon of the Mongol cavalrymen was, of course, the bow, but the Mongols speedily learnt to handle the other, traditional weapons in normal use throughout the Iranian world, and from the time of Abaqa (r. 663-80/1265-82), the Khans endeavored to set up armories and factories for weapons (*kārḵāna-ye selāḥ*); the Mongols' extensive and sophisticated use of siege machinery and techniques has already been noted above. See Spuler, *Die Mongolen*, pp. 397-421; D. Martin, "The Mongol Army," *JRAS*, 1943, pp. 46-85.

The military traditions of the Mongols continued under the Timurids, and were also strong among the various Turkman dynasties who dominated Iran in the two centuries or so before the rise of the Safavids. In Transoxania, in the Uzbek Turkish army of Moḥammad Šaybānī, in which Bābor originally served at the close of the 9th/15th and the beginning of the 10th/16th centuries, the practices of Jengiz Khan in the organizing of hunting parties, in the acclaiming of the battle standards, and in the deployment of troops for battle—with soldiers retaining their positions hereditarily—were expressly followed (see Bābor, *Bābur-nāma*, tr. A. S. Beveridge, *The Bābur-nāma in English*, London, 1922, pp. 154-55). Amongst the Āq Qoyunlū, in the time of the great Uzun Ḥasan (r. 857-82/1453-78), Jalāl al-dīn Davāni's *ʿArż-nāma* shows how their

military titulature and the technical vocabulary of war were still impregnated with Mongol terms. On parade, the Āq Qoyunlū Turkman troops were drawn up in the Turco-Mongol fashion of right wing, left wing, and center (*sağ wa sol wa manqalay*). The top commanders were called *amīr-e noʾīn* (Mongolian *noyan* "master, lord"), a term which was to survive, as *amīr-e nūyān*, in Iran for "full general" till the end of the Qajar period; one group of the rank-and-file was called *nowkar*s (Mongolian *nökär* "companion"); and the term for smaller, component units of the army (in the Timurid army, for a mere company of 50 to 100 men) was *qošūn* (Mongolian *k/qošiğun*), in later Persian a term for "army as a whole" (see V. Minorsky, "A Civil and Military Review in Fārs in 881/1476," *BSOS* 10, 1939-42, pp. 141-78; Doerfer, *Türkische und mongolische Elemente* I, pp. 406, 521).

One significant aspect of Āq Qoyunlū military organization is their use of firearms. Uzun Ḥasan's forces had been routed in 878/1473 near Terǰān in eastern Anatolia, when their firearms had been no match for Meḥemmed Fāteḥ's handguns and cannon, with their cavalry decimated by the Ottoman superior firepower; but the Āq Qoyunlū speedily learnt to use them more effectively. The sultan's personal guard (*nowkarān-e ḵāṣṣa*, *bōy-e nūkarān*, *īnāqān*) had handguns in the later 9th/5th century, and the army both used captured Ottoman cannon and cast its own for sieges; moreover, it is well-known that Uzun Ḥasan's Venetian allies supplied him with cannons and arquebuses and artillerymen to operate them and advise on their use (see J. E. Woods, *The Aqquyunlu: Clan, Confederation, Empire*, Minneapolis and Chicago, 1976, pp. 8, 129, 131-32, 150; Minorsky, "Uzun Ḥasan," in *EI*[1] IV, pp. 1066-67).

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In Western languages, the general chapters on military organization in A. von Kremer, *Culturgeschichte des Orients unter den Chalifen*, Vienna, 1875-77, 2 vols., I, pp. 203-55, and R. Levy, *The Social Structure of Islam*, Cambridge, 1957,

pp. 407-57, contain material relevant to Iran, but there is no work specifically devoted to the army in Iran. For the period up to the Saljuqs, however, see Spuler, *Iran*, pp. 485-507.

Much relevant information on military affairs may be found in the following articles by C. E. Bosworth in *EI*^{2}: “Fīl. As Beasts of War,” II, pp. 893-94; “Ghulām. ii. Persia,” II, pp. 1081-84; “Ḥādjib. iii. Eastern Dynasties,” III, pp. 46-47; “Ḥarb. v. Persia;” III, pp. 194-98; “Ḥiṣār. iii. Persia,” III, pp. 470-72; “Iṇʿām,” III, pp. 1200-02; “Ispahsālār,” IV, pp. 208-10; “Iṣṭabl. iv. Persia,” IV, pp. 217-18; “Istiʿrāḍ, ʿArd,” IV, pp. 265-69.