The emergence of the light, horse-drawn chariot in the Near-East c. 2000–1500 B.C.*

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The recent appearance of three richly documented monographs assembling the diverse and often complex evidence for riding and traction in the pre-classical societies of the Near East and Europe (Littauer and Crouwel 1979; Crouwel 1981; Piggott 1983) provides an opportunity for reassessing a number of critical issues in the earliest history of the light, horse-drawn chariot, whose arrival in many ancient communities has long been seen as a source of significant change in politics and society. Not only do the authors of these new books differ in stimulating ways over their interpretation of current evidence for this critical innovation, but they also provide valuable and readily accessible documentation and illustration from which to modify some long-standing misconceptions about chariots' earliest history. These are recurrent not only in the secondary literature, but also at times in more specialist studies. This paper takes for granted the extensive bibliography and terminology given in these three monographs.

Accounts of the emergence of the light two-wheeled, horse-drawn chariot in the ancient Near East and Egypt have long been dominated directly and indirectly by the extensive and complex body of evidence from the Late Bronze Age (c. 1550–1200 B.C.), when pictorial and textual information (unusually revealing in itself at this time) is complemented by some actual chariots surviving in the XVIIIth Dynasty tombs of Egypt. The range and detail of some of this documentation arises directly from an initial surge in the sixteenth century B.C., when, in little more than a century, the light war chariot became familiar in an area extending from Greece to India, and from south Russia to Egypt. The apparent abruptness of this widespread appearance, and the close similarity in form between chariots over the whole area at the beginning of the Late Bronze Age, has long encouraged the view that their spread must be attributed to a specific people.

In fact, this is the second, not the first, stage in a process of innovation and diffusion in which many factors are still obscure. It is, then, particularly unfortunate when features of a developed situation are projected backwards without critical appraisal of the primary evidence for chariotry in the Middle Bronze Age, particularly for its role in war, which some now take for granted (Yadin 1963: 74ff.), and others doubt (e.g. Dalley 1984: 150,

* The ‘Middle Chronology’ is used here, for convenience, as in the revised Cambridge Ancient History.
159). Two groups of people, the Hurrian-speaking and the Kassite-speaking, and one political system, that of Mitanni across northern Syria and Iraq, all assumed to a greater or lesser extent to be intrusive, have often been seen as the crucial agents in the introduction and dissemination both of the light war-chariot, and of the domesticated horse to draw it, in the middle of the second millennium B.C. The validity of these connections is not merely of local historical interest, since they make assumptions about technological innovation and the circumstances in which it operates that have much wider implications and stand in need of regular re-assessment.

What may be termed the standard view until recently was admirably stated by Goetze in 1963 in a concise study of warfare in Anatolia in the second millennium B.C.:

‘What is important...is the role played...by the Hurrians and by the thin layer of Indians which revitalized them from about 1650 on. For to them can be traced a fundamental change in the technique of warfare which is recognizable everywhere in the Near East at that time and characterizes the period as nothing else. It is the introduction of the light horse-drawn chariot...Nothing much further need be said about the Hurro-Indic origin of the innovation. To the philologists it is proved by words used in connection with horse and chariot...The significant innovation, however, is neither the improvement in its construction nor the introduction of the horse to draw it...the significant thing had been to combine these two elements...Only in this way the innovation could be used militarily. The result was that henceforth warfare was essentially different from what it had been before...The effectiveness of chariotry depended on its swiftness and manoeuvrability, in part also on its weight. When used in massed assault no infantry could possible withstand them’ (Goetze 1963: 124–5; my italics).

In the light of a further quarter-of-a-century’s research, the following paper seeks to re-examine a number of Goetze’s assumptions, primarily those about the emergence of the light chariot in war and the role which it played there.

The appearance and early role of the true horse (Equus caballus) in Western Asia

It was for long argued that the domesticated horse had first been introduced into Anatolia and Mesopotamia in the second millennium B.C. by mounted Indo-Europeans from beyond the Caucasus or the Zagros mountains. This hypothesis has now been radically modified. The earliest available evidence for horse domestication in the Old World is to be found among the sedentary cattle-keeping, non-agricultural communities of the middle Dnieper region of south Russia in the late fifth and fourth millennium B.C. (Sherratt 1981: 273; Piggott 1983: 87ff.). From the fourth millennium horses spread slowly southwards into Anatolia and Iran. Horse bones in domestic contexts of the fourth millennium B.C. at Tal-i-Iblis in south-central Iran (Littauer and Crouwel 1979: 24–5) and at an increasing number of sites in Anatolia (cf. Mellaart 1981: 137) indicate the animal’s presence in Western Asia much earlier than was previously assumed. After an exhaustive examination of the local evidence, primarily textual,
Zarins (1978: 17) concluded ‘that the inhabitants of the Mesopotamian alluvial plain knew all of the equid species (with the exception of the zebrines) in the third millennium B.C., and that hybrid forms appeared early, possibly as early as 2500 B.C.’. In south Russia antler cheek pieces are key indicators of horse domestication in the fourth millennium B.C. (Piggott 1983: 87, fig. 44). So far they are undocumented in the Near East until the Late Bronze Age and then only in Anatolia (Littauer and Crouwel 1979: 88). Until that time equid harnessing for riding was minimal, save at times for a metal nose-ring as traditionally for bovids. The earliest pictorial evidence for ridden horses in Western Asia, on terracotta plaques of the earlier second millennium B.C. in Babylonia, is relatively late (Moorey 1970; Littauer and Crouwel 1979: 41ff.); texts indicate that even then the ass and the mule long remained the preferred animals for riding in urban communities. Whether the custom was adopted earlier and more readily in the periphery is unknown, save for oblique indications in texts that the inhabitants of the Syrian desert and steppe lands were more often horse riders and breeders (Gelb 1961).

The documentary evidence for horses from Middle Bronze Age sites in Syria is sparse, but instructive. By the eighteenth century B.C. at Chagar Bazar, texts refer to harnessed teams of horses, to grooms and to trainers (Gadd 1940: nos. 929, 938, 946, 968, 979), but they do not make the role of the horses explicit. About the same time at Mari the information is fuller (Dalley 1984: 160ff.). Here, horses were prized animals; the royal family was involved in breeding and training them; their management was controlled and effective. The horse is particularly associated with Amorites in this context, as well as among the references to it in texts from the palace in level VII at Tell Atchana (Alalakh) (Kupper 1957: 36ff.; Weeks 1985). In general, texts reveal that horses were coming to Mari, and to the King of Assyria, at this time from the west, from inland Syria and from Anatolia, not from the east. At this stage, in the early and mature Middle Bronze Age, there seems to be no hard case for an exclusive Hurrian or Indo-European involvement in breeding, in training, or in the dissemination of the arts of horsemanship and chariots. Peoples from diverse ethnic and linguistic groups in Syria and east central Anatolia, as well as in other undocumented regions, were involved with the horse and its still evolving role in human societies.

Whether or not the true horse or one of its hybrids had on occasions been harnessed in the third millennium in Sumer, or elsewhere, to pull heavy war wagons with block wheels is not yet firmly established. The textual references are not explicit (Zarins 1978: 4ff.) and osteological evidence is equivocal. So generally is the information from art; but some representations raise the possibility. This is particularly true of an isolated metal rein-ring from Til Barsip in Syria c. 2500–2350 B.C. for a war wagon, and at least one Mesopotamian cylinder seal of the mid third millennium B.C., where the true horse or a hybrid may be shown (Littauer and Crouwel 1979: 26, 57–8; Buchanan 1966: no. 255, from Kish, see Plate 1 here). In every respect it now seems increasingly the case that in the Near East the first association of the true horse (or its hybrids) and wheeled vehicles had taken place in the third millennium; this connection, at least, was not a sudden, intrusive innovation from the north or the east in the middle of the second millennium B.C. Ridden horses did not become a regular component of military formations until the first millennium B.C.
The emergence of the light chariot drawn by horses c. 2000 B.C.

1. Littauer and Crouwels' hypothesis (1979)

In their comprehensive study of wheeled vehicles and ridden animals in the ancient Near East, Littauer and Crouwel argue the case for a ‘local evolution of the light, spoked-wheel, horse-drawn chariot in the Near East itself, in contrast to the long-held theory that it was introduced from outside in an already evolved form by Indo-European-speaking steppe tribes’ (Littauer and Crouwel 1979: 68). They outline the early history of the true horse in the area (as above) and explain the development of equid draught for heavy vehicles with block wheels in the third millennium as the background from which the chariot emerged locally. They see the technological genesis of the spoked-wheel in the cross-bar wheel, first evident on a cylinder seal from Tepe Hissar in northeast Iran in the later third millennium B.C. (Fig. 1) (Littauer and Crouwel 1977: 99–100). This type of wheel is directly associated on cylinder seal designs from Karum Kanesh (Kültepe) II in east central Anatolia, at the outset of the second millennium, with heavy four-wheeled...
and lighter two-wheeled vehicles equipped for the first time with spoked wheels. The earliest such wheels have four spokes. Littauer and Crouwel consequently urge the case for a progressive series of modifications in the wheels and in the box of the earlier two-wheeled vehicles, turning the traditional ‘platform car’ into the light chariot with bentwood frame and spoked wheels, in the first quarter of the second millennium BC. ‘All this experimentation would indicate a lively local development rather than introduction from outside of a fully formulated type’ (Littauer and Crouwel 1979: 70). The linguistic and lexical evidence long invoked to indicate Indo-European sources of innovation they believe to be too late to relate to the problem of origins.

2. Piggott’s hypothesis (1978–83)

Piggott has described his conception of the circumstances in which the light, horse-drawn chariot appeared in the Near East in two papers, printed before Littauer and Crouwels’ monograph, and then in his later book, which was able to take account of their published views. In the first of his two papers the basic hypothesis, which has remained largely unchanged, was clearly set out:

In the urban and literate civilizations of the ancient Near East, the adoption and development of the chariot in the earlier second millennium B.C., though it had a background of onager-drawn block wheel battle cars, was not an internal evolution from this, based on improved carpentry techniques and the substitution of a new draught equid Equus caballus, for the previous Equus hemionus. It was rather the result of a ready social acceptance of the light, spoked-wheel, horse-drawn vehicle from alien, non-urban, non-literate communities to the north; prehistoric peoples within the natural territory of the wild horse, who included some within the Indo-European language family, whose vocabulary contributed to the jargon of chariotry just as early motoring in this country adopted from France chauffeur and chassis, tonneau and coupé. (Piggott 1978: 42).

Technology plays an important role in Piggott’s argument. He believes that the spoked wheel was a new invention, as did Gordon Childe (1954: 214): ‘though naturally an expression of the wheel idea, the spoked wheel was a new invention rather than a modification of the tripartite disk’. Piggott goes further, arguing that the horse-drawn light cart or chariot was as a whole a new invention, and that the new factor involved was speed provided by a new motive force, which in the instance of the small horses of antiquity could only be exploited by a combination of lightness and resilience of a new kind. . .the disc-wheeled ox-wagon might be seen as a slow, heavy, timber-built compression structure, and the chariot as a fast light wood structure, largely in tension with its bent-wood felloes and frame’ (Piggott 1979: 10–11; cf. 1983: 27ff.).

3. Comment

In Piggott’s terms the juxtaposition of three distinct wheel types on a variety of vehicles
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on seal designs from Karum Kanesh II in Anatolia during the first two centuries of the second millennium B.C., (Figs. 2–4), would indicate not three successive stages in the same local evolutionary sequence from block through cross-bar to spoked wheel, but rather the juxtaposition of two separate and in geographic terms distinct trends. On the one hand the cross-bar wheel, developed as a modification of the block wheel, represents an attempt to make a lighter wheel that is already evident by about 2500–2350 B.C. as far afield as Tepe Hissar in northeast Iran and may be set within a mainstream Near Eastern tradition of vehicle construction extending in Mesopotamia back into the fourth millennium B.C. On the other hand, the four-spoked wheel, appearing in Karum Kanesh II for the first time, represents a relatively recent introduction from the Steppe where it had been invented. As Littauer and Crouwel (1977: 102–3) had appreciated, their arguments for a local Near Eastern evolutionary development in wheel construction rest largely on the assumption that the earliest spoked wheels were made with spokes mortised into a cylindrical nave. If they were made in the complicated manner of the oldest surviving chariot wheels from Egypt (Western 1973), derivation from a cross-bar wheel seems much less likely, if not improbable. Such details are not evident on the tiny scale offered by seal designs nor on the copper model four-spoked wheels found at Acemhöyük in Anatolia, dated a century or so after the Karum Kanesh II seal designs.

As the Steppe had a long history of ox traction, with block wheel vehicles by 2000 B.C. (Piggott 1983: 39ff.) and an even larger experience of the domesticated horse than Western Asia, light horse-drawn vehicles might have emerged there in the third millennium, using a bent-wood technology, whence they or the requisite skills passed to eastern Anatolia. Although there is a rich diversity of opinion over the range, date and

Figure 2 Enlarged detail from a cylinder seal of Karum Kanesh II type (c. 2000–1850 B.C.) in Anatolia to show cross-bar wheels on four-wheeled vehicle (after Littauer and Crouwel, 1979, fig. 24).
direction of contacts between the peoples of South Russia and Anatolia at this time (cf. Gimbutas 1981; passim; Yakar 1985), the fact is virtually undisputed. No less controversy animates attempts to recognize Indo-European elements in the archaeological record of Early Bronze Age Anatolia; but the texts of Karum Kanesh II, the earliest from the area, certainly indicate the presence of Indo-European-speaking peoples thereabouts by 2000 B.C. (Mellaart 1981). If, as seems possible on a calibrated Carbon-14 chronology, the earliest baked-clay model four-spoked wheels from eastern Europe
may be taken back so close to the date of *Karum Kanesh* II as to make little difference (Piggott 1983: 93, uncalibrated dates), then the case for a common source of innovation in the South Russian Steppe is appreciably strengthened. Whatever the case, the novelty introduced from the north into Anatolia, sometime before 2000 B.C., if there was one, may have been little more than the first application of a bent-wood technology to vehicle construction: the lightening first of wheels, then of body, by a new method of vehicle building. The nature of the surviving evidence, both north and south of the Caucasus, will always make this question difficult to resolve.

Although this paper uses primarily the archaeological and art-historical, not the philological, data for the emergence of the light chariot, the argument from vocabulary mentioned by so many commentators has to be faced. Two points, one general, one more specific, need to be made with regard to this long established approach to the problem of innovation in matters of chariotry and horsemanship in Western Asia. First, as the history of technology regularly illustrates, the adoption of a technical term from one language directly into another may indicate the immediate foreign source, or the agent of diffusion, in a particular case, but it by no means necessarily indicates that the foreign source was also the innovator. Second, much more comprehensive knowledge of the relevant technical vocabulary in third millennium Sumerian (Civil 1968) and Akkadian (Salonen 1951) in Mesopotamia, and in the recently discovered tablets from Tell Mardikh (*Ebla*) in Syria, is needed before easy assumptions may be made about the relationship between specific language-speaking peoples and particular technological innovations in the following millennium B.C.

**Warfare in the Middle Bronze Age**

1. **Roles for the light chariot**

Any attempt to trace the emergence of the light horse-drawn chariot as a military vehicle from 2000 B.C. in Western Asia must in the first place take account of two things, the nature of warfare in the Middle Bronze Age and the potential role for light chariots in that particular context. In both cases every attempt has to be made to avoid introducing later practices into situations where they are not appropriate. The possible role of the chariot may best be taken first, since it involves a deep-seated misconception. For a long time and in many places analogies drawn from tank warfare have haunted the history of early chariotry. They are firmly rejected by most recent writers (Littauer and Crouwel 1979: 33; Schulman 1980: 114ff.). The tactic of ‘hurling the chariots into the midst of the enemy’ (*Xenophon Cyropaedia* VI.1.30) was a shock tactic first employed in the later fifth century B.C. with redesigned vehicles and effectively blinkered horses. The light, horse-drawn chariot was never used to charge into dense formations of infantry. This is borne out by all surviving representations of chariotry in Western Asia and Egypt in the Bronze Age. It was pre-eminently its speed and mobility as a firing platform and its manoeuvrability over suitable terrain that controlled the horse-drawn light chariot’s tactics: to harass, break up and demoralize infantry before and during a battle in the open and to mop up the enemy afterwards, perhaps one of its most effective roles; to
provide protection for an army on the march and in combat; to blockade at times of siege; and to transport archers and other elite troops.

Both the archaeological evidence (Yadin 1963: 79ff.) and the textual record in so far as it goes (Dalley 1984: 145ff.; Houwink ten Cate 1984: 67ff.) indicate with striking regularity the vital role of siege warfare in military conflicts during the Middle Bronze Age. The acquisition of towns appears to have been very much the primary means of achieving military supremacy. Considerable ingenuity was expended in devising fresh methods of attack and correspondingly re-inforced means of urban defence. Yadin (1963: 22–3, 68–9) argued that it was an increasing use of the war chariot from the eighteenth century B.C. that modified the form of city-gates, whilst rejecting, as is now widely agreed, any role for this vehicle in promoting urban glacis defences. They were almost certainly a response to battering rams. As there are good defensive arguments independent of light chariotry to explain the changes in city-gate planning (Gregori 1986), the force of Yadin’s case is thereby weakened. If so, there remains no decisive architectural evidence for the impact of the war chariot in the Middle Bronze Age.

However, there is no reason to expect there would be. The role that chariots had come to play in warfare before the end of the Middle Bronze Age, it is argued here, was more subtle than traditional arguments for or against their use commonly assumed. This role, by its very nature, is less likely to leave distinctive marks on fortifications or be easily represented in art.

The importance of chariots in patrolling and blocking the access to a besieged city is well illustrated by references in a surviving account of the Hittite siege of Urum in south eastern Anatolia in the reign of Hattusilis I (c. 1650–1600 B.C.). Then the attackers isolated the city with a cordon of eighty chariots and eight ‘armies’ of infantry (Güterbock 1938: 133). It is significant in considering such manoeuvres to appreciate that Hittite chariotry training already included night warfare (Houwink ten Cate 1984: 68). If, in fact, combat in the open was avoided as often as possible, it is not so surprising that the emergence of elite corps of charioteers, with a complex social and military organization, is evident only in the Late Bronze Age at a time of conflict between major rulers with the extensive resources and motivation needed to maintain and equip substantial bodies of men and horses with all the paraphernalia chariotry requires.

Yet, even if a model more appropriate to Middle Bronze Age warfare is used when seeking to trace the development of the earliest rise of the horse-drawn light chariot in combat, the task remains difficult. The available textual evidence is meagre and largely negative in its reference to chariotry in battle, whilst the scarce and very small-scale pictorial information has usually been interpreted in recent years as indicating that the light chariot was not used in warfare during the Middle Bronze Age (see below). Texts from Middle Bronze Age Anatolia have long been most evident in attempts to elucidate the earliest history of the war chariot (Goetze 1956: 125; Kammenhuber 1961: 28); but recently Houwink ten Cate (1984: 59) has offered a sceptical appraisal of their relevance:

apart from the annalistic and autobiographic text of the ‘Great King’ Ammunas, which would seem to contain likely references to the new weapon but of which the dating is disputed, and the examples from the Anum-Herwa fragments, of which the
dating is also insecure, the first incontestable examples would be those in texts referring to the time of Hattusilis I and Mursilis I (later seventeenth century B.C.) with respect to the major powers of that period, Aleppo and Hattuša, as well as to the minor city-states of that same age.

However, he does point out that by this stage there is good reason to think that the war chariot had already proved its usefulness, though the priority need not have been among the Hittites of east central Anatolia.

If it may be assumed that the war chariot was well established in North Syria and Anatolia by the second half of the seventeenth century B.C., the earlier texts from Tell Atchana (Alalakh) and Mari in Syria are relevant to any attempt to trace the previous history of the phenomenon. In the older group, those from Mari, in the first half of the eighteenth century B.C., there is good evidence for light horse-drawn chariots, but none that clearly indicates their use in combat or for other military purposes (Dalley 1984: 150, 159, 163–4; cf. Sasson 1969: 31–2). The near contemporary Anatolian ‘Text of Anittas’, sometimes cited in this context (as Littauer and Crouwel 1979: 65) refers to forty teams of horses, but they may best be regarded as a means of transport, not as an indicator of a military corps of war chariots (cf. Houwink ten Cate 1984: 80–1). The palace in level VII at Atchana, whence came an archive, was almost certainly destroyed by Hattusilis I. Published texts from this palace offer no hard evidence for the military use of chariots (cf. Wiseman 1953). The levelling over the palace (Woolley’s levels VI-V), however, yielded one of the most diagnostic traces of Bronze Age chariory, a stone saddle boss from the yoke of a chariot (Woolley 1955: 296, pl. LXXXII. 27; cf. James 1978).

Without the direct aid of textual information there remains only the indirect evidence of tiny, compressed chariot scenes on Syrian cylinder seals to elucidate the vehicle’s role at this time. They are cut in what is currently known as the mature ‘Syrian Style’, dated between the late nineteenth and early seventeenth centuries B.C. The significance of these rare designs on cylinder seals combining a light horse-drawn chariot, a row of marching or running men, various filling motifs and recumbent or contorted human bodies in the field about, or beneath, the chariot horses has been discussed a number of times in the past. They have generally been rejected as military scenes by writers on ancient Near Eastern seals. Buchanan has provided the most elaborate explanation: ‘Obviously this is not a war scene but a spectacular parade with decorated harness, a fancy chariot, athletic performers and marchers in perfect step’ (Plates 2–5 and Buchanan 1971: 15).

It needs to be said at once that the light chariot served a number of roles in the Middle Bronze Age among which service in war was only one and quite possibly the least common. It was a parade, prestige vehicle for men of status; over restricted distances in suitable terrain it served to convey those wealthy enough to possess it; it was used in hunting and perhaps also for racing. Each and all these roles may be represented on the twenty odd cylinder seals of the Middle Bronze Age bearing chariot scenes so far published. My purpose here is only to argue that a military role is not excluded from the possible interpretations of the small corpus of scenes so far available. The strongest case is offered by revival of the motif of a recumbent foe beneath the equid team (Fig. 5), a symbol of military victory previously used in scenes of Sumerian war wagons (cf. Littauer
Figure 5 Enlarged detail from a cylinder seal, c. 1850–1650 B.C., showing a recumbent ‘foe’ (after Littauer and Crouwel, 1979, fig. 33).

and Crouwel 1979: 32, figs. 3 (right), 31, 33). There is no reason to suppose the meaning of this image had changed when it reappears with horse-drawn light chariots over half a millennium later; in one case on a seal impression on a tablet dated to the 14\textsuperscript{th} year of King Hammurabi of Babylon (c. 1779 B.C.) (Buchanan 1971: 14ff., pl. IIC; cf. Plate 2 here). In some scenes the figures in the field are clearly armed (Buchanan 1971: pl. IIId). The ‘running’ pose of some attendant figures (cf. Buchanan 1971: pl. IIe) is most plausibly explained by comparisons with the runners shown as escorts to the Egyptian royal chariots on XVIII\textsuperscript{th} Dynasty reliefs at Tell el-Amarna (Davies 1903: pl. Xff.; 1905: pl. XIIIff.). A military interpretation for these scenes has been further inhibited by the representation of a single charioteer, though there are exceptions, one where a recumbent foe is also shown (Littauer and Crouwel 1979: fig. 33), and the absence of the bow save in scenes of hunting (Littauer and Crouwel 1979: fig. 36); yet there are seals in the series not associating a chariot and hunt scenes where the charioteer wears a quiver (Plate 3). Two seals of the later Middle Bronze Age, possibly from Palestine rather than Syria to judge by certain stylistic traits, show a single charioteer with bow (?) and quiver on his back and a second figure behind the chariot about to strike with a sword (Littauer and Crouwel 1979: fig. 34; Ward 1910: fig. 981). This certainly looks like a ‘war scene’ (Fig. 6).

Plate 2 Modern impression from a Syrian cylinder seal with recumbent human figure near the feet of the horses drawing a light chariot, c. 1750–1600 B.C. (Enlarged; Ashmolean Museum: 1914.98).
Plate 3 Modern impression from a Syrian cylinder seal; charioteer with bow and quiver on his back; escort wearing helmets (?), c. 1750–1600 B.C. (Enlarged; Ashmolean Museum: 1920.25).

Figure 6 Enlarged detail from a cylinder seal, c. 1850–1650 B.C., showing either attack from behind or a warrior about to enter a chariot (after Littauer and Crouwel, 1979, fig. 34).

Plate 4 Modern impression from a Syrian cylinder seal; chariot scene with recumbent human body and detached human heads, c. 1750–1600 B.C. (Enlarged; Ashmolean Museum: 1920.50).

Plate 5 Modern impression from a Syrian cylinder seal; chariot scene; charioteer with bow (?) and quiver on his back; bird beneath horses, c. 1750–1600 B.C. (Enlarged; Ashmolean Museum: 1912.115).
The evidence of tiny seals is not the ideal basis for any argument about the emergence of a military vehicle, since they are epitomes of complex scenes; but fortunately this Middle Bronze Age category of seal is unusually rich in detail. It is relevant to recall that for almost fifteen hundred years from about 2200 B.C. there are virtually no known monumental war scenes in the art of Western Asia. That is why so many accounts of warfare between c. 2200 and 850 B.C. are illustrated from the rich repertory of Egyptian war scenes, executed under the XVIIIth and XIXth Dynasties of the New Kingdom, c. 1550–1200 B.C., which glorify the military prowess, not always real, of the ruling pharaoh. If only the New Kingdom scarab seals illustrating the Pharaoh triumphant in his chariot had survived, or the later Neo-Assyrian cylinder seals with chariot scenes, without their contemporary monumental royal palace reliefs of warfare, to reveal the military activities of the great Assyrian Empire, studies of warfare then would be as pictorially impoverished as they are for the Middle Bronze Age and, consequently, as subject to misconstruction.

2. Composite bows and archers in chariots

In the earlier first millennium B.C., when horsemen, including mounted archers, were first absorbed into armies as combat troops, their method of fighting required quite new techniques whose painful evolution may be studied through a series of Neo-Assyrian palace reliefs (Littauer and Crouwel 1979: 137ff.). This experimentation was not necessary a millennium earlier when the horse-drawn light chariot emerged among peoples where the bow was established as a combat weapon and in regions where the terrain suited the virtues of the new vehicle. From the outset archery was fundamental to the role of the light horse-drawn chariot as a war vehicle. Apparently the bow had been little used with the heavy Sumerian war wagon; it generally seems to have transported a javelin or spear thrower rather than an archer (Yadin 1963: 39; Littauer and Crouwel 1979: 31ff.). But they were far less manoeuvrable and may have given little advantage to bowmen. Archaeologically speaking, the role of the bow in Early Dynastic Sumer remains obscure; metal ‘arrow-heads’ are rare and may really be javelin heads when they do appear. In the old accounts that attributed the light war chariot’s introduction into Western Asia to Hurrian-speaking peoples in the middle of the second millennium B.C. they were also credited with inventing a new type of bow, the composite bow, to be used with it (Vaux 1967: 484–5). As Yadin (1963: 47) appreciated, this bow was not a novelty at that time. Although there certainly were regions, notably Egypt where its introduction did not precede the arrival of the light horse-drawn chariot in the IIInd Intermediate Period (c. 1800–1550 B.C.), this is not a universal phenomenon (Schulman 1980). The composite bow had been known in the Near East for a long time before the Middle Bronze Age.

The prehistory of the composite bow is a matter of some debate and likely to continue so, since precise evidence is, and is likely to remain, in very short supply. Its constituents are first vividly described in historic times in a fourteenth century B.C., or earlier, Ugaritic legend (‘Aqhat’) recorded on a tablet found at Ras Shamra (Ugarit) in Syria:

‘(Take) the most splendid of (–) trees from Lebanon, the most splendid of sinews from
wild bulls, the most splendid of horns from mountain-goats, of tendons from the hocks of a bull'

Unfortunately the word used to describe the trees is problematic so that the type of wood is unknown. Ash is possible (cf. McLeod 1970: 31). This reference is contemporary with the oldest composite bows to have survived, from royal and private tombs of the New Kingdom in Egypt (McLeod 1962), where construction varies from bow to bow. The argument that the type originated where inferior wood and bone were the only possible materials available to the Bowman has been advanced in favour of regions as diverse as ‘high-latitude grassland, coniferous forest, or tundra’ (Forde 1954: 163) and lowland Mesopotamia (cf. Rausing 1967: 145). Using the criterion that in representations some feature must preclude a self-bow (basically a sufficient degree of recurvature), the composite type of bow has been recognized on cylinder seals from southern Iraq in the later fourth millennium B.C. and on seal impressions from the neighbouring part of Iran at much the same time (Collon 1983: 54–4, pl. XIX). More problematic is a painted sketch of an archer on a pottery vessel of the Halaf Period, about the middle of the fifth millennium B.C., from Arpachiyah in Iraq. It may show a ‘reflexed “double-convex” bow which is possibly, but by no means certainly, a composite’ (Collon 1983: 54). After the later fourth millennium B.C., representations of the composite bow have not generally been recognized in art until the Akkadian Period (c. 2350–2150 B.C.) and it is thought not to have been part of the Sumerian armoury.

This may be so; but a unique find inhibits generalization. From Mari on the Euphrates, dating to the Early Dynastic III Period (c. 2600–2350 B.C.), has been excavated a small stone slab bearing an incised design of a siege scene; a vignette of warfare not illustrated again in surviving Mesopotamian art until the first millennium B.C. (Parrot 1971: 269, pl. XIV.4; Yadin 1972). At this time Mari had close political and cultural contacts with Sumer. On this slab an archer is not only using a double-curved composite bow with reflexed tips (the so-called Scythian bow of later times), but he is using the ‘Mediterranean or Asiatic hold’: ‘he grasps the string with his first three fingers while simultaneously gripping the arrow between his first and second fingers; his thumb and little finger are not used at all’ (Yadin 1972: 91). This isolated find indicates how cautious any assessment of the presence or absence of organic weapons in any time or place has to be. Even in civilizations where military themes were recurrently employed in both their major and minor arts, there can be enormous gaps in the surviving record.

The basis for documentation in Mesopotamia, however, has been greatly improved from the second half of the third millennium by convincing demonstration that a word long taken to be a ‘throwing stick’ is much more likely to describe a composite bow (Durand 1983: 336ff.; Salonen 1976: 61). This translation confirms that this bow was always a prestigious one, as might be expected from its complexity and consequent cost of manufacture, and that it was not one favoured by the Sumerians. This goes further to endorse the view that the heavy war wagon, in Sumer at least, had not carried archers using composite bows. In Akkadian times they are shown as the equipment of foot soldiers in Mesopotamia. This increases the probability that it is only with the advent of the horse-drawn light chariot in Western Asia that the archer with a composite bow used
mobility to increase his already formidable fire-power. Whether horse-borne or wheel-borne archers used such bows in the Steppe at this time is unknown. The thesis that the skills of using a composite bow whilst riding horses were brought to the Near East by intrusive northerners in the earlier first millennium remains undisputed (Littauer and Crouwel 1979: 136, no. 132). Whether their ancestors, c. 2000 B.C., offered a similar service in vehicles is one of a number of interesting possibilities if Piggott’s hypothesis is accepted.

Texts of the eighteenth century B.C. from Mari reveal that composite bows were regular combat weapons there. In at least one case both self and composite bows are listed as part of an issue including a two-wheeled chariot (Durand 1983: no. 295, p. 333). In another description of a chariots mention is made of a leather container for a quiver (Durand 1983: no. 254). Among the seventeenth century B.C. tablets from level VII at Tell Atchana there is one containing a list of bowmen of which two, with Amorite names, are also noted as possessing chariots, whilst another text records the issue of a bow to a charioteer (Wiseman 1953: nos. 205–6). Hard evidence for the use of composite bows in chariots during military operations in the Middle Bronze Age will, by the nature of things, continue to be elusive; but it is already clear that this bow was not an innovation in the Near East in the Middle Bronze Age. People long familiar with it in battle, whether stimulated from the Steppe or not, would readily have grasped the extended power a mobile platform gave any archer using it on patrol, in pursuit, or in blockade operations. A replica of an ancient Egyptian composite bow has been used to show that its range and penetrating power were greater than that of the indigenous self-bow (McLeod 1970).

3. Defensive innovation: scale-armour

The impact of a major military innovation, its timing and its degree, may be crudely assessed in the absence of more positive evidence by the defensive response it elicits. Yadin (1963: 84) argued that metal scale-armour was developed as a reaction to the extensive military use of the chariot as a firing platform for archers armed with composite bows, since charioteers and archers did not have a free hand to protect themselves with a shield. The appearance of a third person as a shield-bearer in a chariot is a rare, later usage. Similar protection was equally vital for the horses. It is only at Nuzi in eastern Iraq, in the later fifteenth to fourteenth centuries B.C., that textual information and material remains may for the first time be combined to yield graphic and decisive illustration of the importance of scale-armour for chariot warriors and their horses (Kendall 1974: 263ff.; 1981: 208ff.). A coat of scale-armour to protect the body, known as siriam/sariam, is also not evident in texts before the fifteenth century B.C. (Kendall 1981). This same term, with phonetic differences, was used in Akkadian, Egyptian, Hebrew and Ugaritic thereafter. Scale-armour is the third element, with the light chariot and the composite bow, in the group of innovations long attributed to the inventiveness of Hurrian-speaking peoples primarily, in this case, on philological grounds. Here the last two have been detached from them in this respect; but what of the third?

Material evidence for scale-armour of a distinctive and immediately recognizable type is still exceedingly meagre before the fifteenth century. Neither the enigmatic pieces of
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sheet metal from Early Bronze Age contexts in Israel (Hestrin and Tadmor 1963: 284, fig. 14, pl. 30D; Yeivin 1968: p. IC) nor the supposed representations in the third millennium B.C. at Mari and Ur (cf. Yadin 1963: 49) contribute to this development. Even if rightly identified as armour, and this is doubtful, they are not the snake-like scales of later times. An isolated copper-alloy scale of standard form was excavated at Boghazköy from Büyükkale IVd, contemporary with Karum Kanesh I(b) (Bittel et al., 1958: 35; Boehmer 1972: 104, pl. XXV. 803) in the mature Middle Bronze Age. If the context was undisturbed, this might be taken as yet another indicator of the innovatory role of Anatolian peoples at this time in chariot warfare.

Textual evidence once cited to show the presence of scale-armour in the eighteenth century B.C. at Mari in Syria and Ischali in eastern Iraq has now to be dismissed. Kendall (1981: 205, n. 24) has shown that gurpisu in Akkadian is a generic term for ‘helmet’, both for men and for horses. Unqualified it cannot be taken, as once it was, to indicate the presence of scale-armour; indeed the helmets mentioned in texts from both these towns were made of organic materials. It now has to be concluded that it was not until the Late Bronze Age that scale-armour became a recurrent feature of the repertory of military equipment (Boehmer 1972: 104ff.; Catling 1977; Ventzke 1983). Such armour was expensive; it needed a substantial military establishment to sustain its production and its regular use on any extended scale. In the fourteenth century B.C. suits of it are listed among the magnificent gifts sent by Tušratta, King of Mitanni, to the Egyptian pharaoh and they were welcome war spoils, depicted in great detail in Egyptian tomb paintings of the XVIIIth Dynasty (cf. Yadin 1963: 197; Kendall 1974: 263ff.).

Sources of innovation

No single ethnic or linguistic group seems to have been the master innovator in the history of horse-drawn light chariots in the Near Eastern Middle Bronze Age. A diversity of peoples and circumstances more probably explain the gradual, incremental nature of the changes evident in the available, albeit inadequate, range of evidence. Steady technological innovation of the type involved here is more likely to have been exercised in court workshops where, in a time of conflict between the increasingly prosperous city-states of Middle Bronze Age Anatolia and Syria, there was an established need for improved weaponry. In conflict, above all else, failure lends great pressure to innovation. That these innovations did not spread so far or so rapidly as refinements on them did in the Late Bronze Age may be a reflection of the greater cultural integration and interaction operating at court level across much of the Near East at that time. The application of bent-wood technology to chariot construction, the evolving skills of managing chariot horses, and the developing tactics of manoeuvring this new firing platform to best advantage had to be transferred at first hand. Initially they inevitably operated on a restricted scale since they needed to be demonstrated and practised. Once the Amorites, the Hittites, the Hurrians and others had demonstrated their effectiveness by the end of the seventeenth century B.C., the rate of diffusion increased and a critical change at the outset of the Late Bronze Age saw the emergence of a social group whose status derived from prowess with chariots in war.
There is no dispute about the fact that inhabitants of Mitanni in the Late Bronze Age were outstandingly competent, and apparently particularly prided themselves, in the management of light war chariots and in the training of horses to pull them. Yet this is not so much connected with any particular ethnic or linguistic group as with the marianna (Rainey 1965: passim), a powerful social group whose high status depended in part, perhaps at first completely, on successful and self-perpetuating exploitation of particular skills in the military use of horses and chariots. Only the resources at the disposal of the rulers of the great powers of the Late Bronze Age, when the political complexion of the Near East was very different from before, and their competitive drive for supremacy, could sustain elite corps of charioteers. Techniques and skills that had gradually developed through the Middle Bronze Age now flowered and flourished in all aspects of military combat (Weeks 1985). It was the marianna, and the social system they represented, who were new at this time rather than the vehicle, the animal, the weapons and the tactics they exploited. That their talents survived in ancient written sources (Littauer and Crouwel 1979: 83ff), whilst those of their predecessors have not, explains the unusually high profile they have long had in modern literature. It is deserved; but it has for long tended to obscure the earlier contexts in which the military use of chariots emerged in Western Asia.

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References


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Abstract

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The emergence of the light, horse-drawn chariot in the Near East, c. 2000–1550 B.C.

Three recent major studies of horse-drawn vehicles in Europe and the Near East provide the background for this review of the evidence for light early military chariots in Western Asia. Recent research has radically modified traditional accounts of the appearance of the domesticated horse and the light chariot in this region. Although the sources of innovation remain debatable, the light chariot appeared earlier and in more diverse contexts than had previously been acknowledged. New models for interpreting its first appearance and use modify previous conceptions of the manner in which it arrived and was diffused.