Technological Developments in Wheeled Vehicles in Europe, from Prehistory to the Sixteenth Century.

Carol Ann McNeill.

Thesis submitted for the degree of Doctor of Philosophy at the University of Edinburgh. 1978.
Diagram to illustrate the evolution of wheeled vehicles. Needham (1965)
IV : II.
a  travaois or triangular sled
a'  triangular cart
  pole chariot
b  slide car or rectangular sled
b'  shaft chariot or true cart
  rectangular drawn sled
c  four-wheeled wagon derived from c
c'  articulated four-wheeled wagon b' a
  d+a
f  four handled hod on single central wheel
f'  wheelbarrow  central wheel
  forward wheel
Rockpaintings at Pena de los Buitres.

After J.G.D. Clark (1952) p 304, fig 167.
PLATE C3

The Oxus Chariot.

Photograph from Treue (1965).
PLATE \[4\]

Chariot from barrow II, Lchashen.

Garton Slack, Yorkshire E.R.

General view of the chariot burial.

HMSO Excavation Reports 1971.
PLATE 67

Carruca dormitoria (reconstruction).

After De Azevedo (1938).
Carruca chiusa.

After De Azevedo (1938).
The Igel monument. (left shows north face, right shows west). After Reinach (1922).
a) Travelling carriage about 1317.  
   After Singer et al (1956) fig 496.

b) English wagon, East Yorkshire, 1920's. Photograph courtesy of Mr Raymond Hayes, Hutton-le-Hole, Yorkshire.
a) Chariot sacre, British Museum Marbles X pl 48.

b) Plaque Campana. After Reinach (1922).

c) Infant’s sarcophagus, Rome. After Reinach (1922).
Four-wheeled baggage wagon from the Aurelian column. After Vigneron (1968).
a) The Aurelian column. After Reinach (1922).

b) The Aurelian column. After Reinach (1922).

c) The arch of Constantine. After Reinach (1922).

d) Sarcophagus bachique, the triumph of Dionysus. British Museum Marbles X no 2298.


b) The Langres relief. After Esperandieu IV (1906-38).

b) The apotheosis of Antoninus Pius, an elephant quadriga from an ivory diptych. After Toynbee (1973).

a) & b) The Thracian wagon reconstruction.

After Venedikov (1960).
Таблица 97
Планшет

Сан.
The Bayeux Tapestry. After Stenton (1957).
FLATE  [21]

From Heidelberg. The Sachsenspiegel. (Leipzig 1952).
PLATE \[22\]

British Library Sloane 3983 folio 12.
Painted chamber of Westminster Palace.

The Grimani Breviary, After Salmi (1957).
Grimani Breviary, a detail.
Ernte is August. Manuscript from Trient, 1420. After Treue (1965).
a) British Library Cotton Tiberius
B V, June. Eleventh century calendar.
After J.C. Webster, The labors of the months in the Antique and Medieval Art to the end of the twelfth century (Evanston 1938).

b) British Library Cotton Tiberius
B V July. After Webster (1938).

c) British Library Cotton Julius A VI
June. After Webster (1938).
An Italian resumé of 1760. After Folena and Molzoni, Ribbeda
Restituta. Library add 17877. An Italian Manuscript
A fifteenth century illumination from Gaston Phoebus' *Livre de la Chasse*.
A southwest German manuscript.

After Treue (1965).
The fifteenth century Toggenburg Bible.
After Treue (1965).
British Library Cotton Augustus
A V folio 45v. A Flemish fifteenth century manuscript.
Brussels 10175 328r, a manuscript from the Latin Kingdom of Jerusalem. After H. Buchthal (1957).
A thirteenth century manuscript from the Kingdom of Jerusalem. After Buchtal (1957).
A thirteenth century manuscript from the Latin kingdom of Jerusalem. After Buchthal (1957).
British Library Royal 1 C VII folio 154v.
Cambridge Corpus Christi Ms 3
folio 161v. Originally belonged
to Dover Priory and illuminated
in ca. 1139.
Bodleian Library Laud Misc 752
folio 134v.
dictum posthuma spectat alab. Cecidit oculos et inclementes aequitatem suam habuit in lanimam egirotinum. Principum nos scirem ad eum. Se consulere beatebub in accursu eorum utque quem de innumeris mea bou. Anguis aurem dixi loquitur e ad bebeum thesibret dicens. Surge ascende in occurrentium nuncios regna tama

re oculos ad eos. Hunc du sit e ad institur causis ad consilienium beatebub in accursu. Quodamque hic dictum eis. De lec
tulo sup quem ascendibit non descendess
sed mortere moneret. Eruo bellat et

sit sunt munit ad eochozum. Quis dictur
cos. Quattuor teneberr eis. Artilli responderet
et dictum oculos nobis aequitatem ad nos.

Se scirem ad regem istius nos
decens. Hic dictum Hunc du sit e ad in situ qua munus beatebub de accavon. Necro de lecuto sup quem ascen

dit n descendit sed mortere moneret. Quis
dictur et Cumus sigur e habuit e in
g occurrer nobis aequitatem aequitatem be

tilla deceusum. Vir pilous e ad eon

palliant accepius remi. Et in bebeum

thesibret e. Manit quod ad eum accepius

un sanctum a sanctura et sunt sub eo.

Ascendit ad eum sedem nos in unctum

gis ad Hono deet redeuntur descendat
PLATE 41

The Winchester Bible (Victoria and Albert Museum) folio 130v. After Boase (1953).
A ladder cart with large wheels. From a painting by Brueghel. After Singer et al (1956) fig 498.
Sledges from Yorkshire, 1920's to 1960's. Photographs courtesy of Mr Raymond Hayes, Hutton-le-Hole, Yorkshire.
European Bronze Age wheeled cinerary urns,


Bronze Age petroglyphs from Sweden, Spain and North Italy.

a) Østfold.
b) Risged.
c) Långön.
d) Casonica Valley.
e) Casonica Valley.
f) Solana de Cabanos.
g) Cuatro Casas (Carmona).

The foreaxle from Lolinsky barrow 4 grave 7 in the Kalmyk A.S. S. R.

I.V. Sinitceyn and E. Erdinev, New

Archaeological Excavations in the territory of the Kalmyk ASSR (Elista 1962-3).
PLATE 4

a) The Bell wagon reconstruction.

b) The Ohnenheim wagon reconstruction.
THE BELL WAGON; [after REST 1948]

THE OHRENHEIM WAGON; [after FORKES 1924]
Wagon remains from the Vix tumulus.
Partly after Jeffroy (1958).
10 naves
11 hubcaps
12 plaques
13 front rails
14 engraved plaques
15 pole mountings
16 body mountings
17 wagon furniture
18 rose-shaped bronzes
19 metal perch
20 handles of chair
21 pole pin
22 pole tip
23 bronze rings
24 rings and hooks decorating
25 the edge of the tilt
26 peg or pin
27 after Joffroy [1958]
28 cover for pole
29 felloe clamp
joint
The Djebjerg wagon reconstruction.

After Treue (1965).
Roman relief near Klagenfurt, Austria. After Singer et al (1952) fig 434.
PLATE 35

Trier City Library Ms 31 folio 58v.

After Lynn White (1962).
Guido da Vigevano's fighting car.

After A. Rupert Hall (1961).
A baby carriage from the Hours of Catherine of Cleves, Duchess of Guelders of ca. 1440. After J Plummer

The Hours of Catherine of Cleves
British Library Egerton 1894
folio 2v.
Etruscan crossbar wheel.

After Treue (1965).
Tiring a wheel. Photographs courtesy of Mr. Raymond Hayes, Hutton-le-Hole and the Rydale Folk Museum.
Fig. 1. Yoke saddle from Chariot of Tut-ankh-Amen
The evolution of modern harnessing.

After Bulliett (1975).
André Haudricourt's hypothesized evolution of modern harnessing

Butti et Fig. 104
'Hannes pieces'. After Jacobsthal (1944).
A Gallo-Roman veterinarian

After Probé and Roubier (1961).
Der Sachsenspiegel.
Old Testament Miniatures.

After Cockerell, James and Foulkes (1927).
The Grimani Breviary.
The wine merchants window, Chartres.

After Treue (1965).
Maurice of Nassau's land sailing carriage. Photograph courtesy of Edinburgh University Manuscript Department.