Historical perspectives on long distance transport of animals

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Summary

Since Roman Antiquity, domestic and wild animals have been transported over long distances for purposes as different as improvement of livestock production, food supply, scientific interest, public entertainment, war and numerous other purposes. This long distance transportation was originally limited to the Mediterranean area but, during the Middle Ages extended to the rest of Europe. The conquest of the New World was the first major occasion to transport large numbers of horses and other livestock across the oceans. Domestic animals were necessary for the new colonies and their armies. European expansion to Asia and the Pacific also required the transportation of large numbers of domestic animals. Data, figures and description of the conditions of transport of animals as different as wild beasts, horses, camels, elephants or poultry are reported for each historical period.

Keywords

Animal, History, Long distance, Transport, Welfare.

Prospettive storiche sul trasporto a lunga distanza

Riassunto

Sin dai tempi dell'antica Roma animali sia domestici sia selvatici sono stati trasportati per lunghe distanze, per varie ragioni quali ripopolamento di allevamenti di bestiame, il consumo alimentare, l'interesse scientifico, l'intrattenimento pubblico, la guerra e diverse altre motivazioni. Questi spostamenti su grandi distanze erano inizialmente limitati all'area Mediterranea per poi estendersi anche al resto d'Europa nel corso del Medioevo. La conquista del Nuovo Mondo creò la prima grande occasione di importanti trasferimenti di un gran numero di cavalli e altro bestiame da una parte all'altra dell'oceano. Gli animali domestici erano essenziali per i coloni e per i loro eserciti. Anche l'espansione europea verso l'Asia e l'area del Pacifico esigeva un massiccio trasferimento di animali domestici. I dati, le illustrazioni e le descrizioni riguardanti le condizioni di trasporto di diverse specie animali quali selvatici, cavalli, cammelli, elefanti e pollame sono riportate per ogni periodo storico.

Parole chiave

Animali, Benessere, Lunga distanza, Storia, Trasporto.

Introduction

'Long distance transport of animals' is a puzzling title for a chapter. Many readers would have probably expected more information on 'long distance transport by animals' given the fact that these animals have transported more humans than they have been transported themselves. Nevertheless, since Antiquity and for various reasons, some animals were unable to move for long distances without the help of humans who had to find ways and means for their transport.

The purpose of this chapter will be a reminder of the objectives and conditions of the

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transportation of some animal species humans wanted to move elsewhere for service or leisure purposes.

Transport of wild beasts and other animals in Antiquity

It may seem surprising that animals were transported in ancient times, when the means of transport on land were rudimentary and when only humans or expensive goods were transported overseas. Among means of land transport, vehicles such as chariots, carriages and carts of many types were used, as well as wagons for carrying loads. They were drawn by horses, mules and oxen, or sometimes by elephants (17). Animals in Antiquity were transported for two special reasons, namely: when they could not move on their own without risk, or when they had to move across water either overseas or to cross large expanses of water. This was the case of wild beasts sent to Roman menageries and beast shows, or of high-priced animals, such as racehorses or elephants.

Animals transported to Roman private parks, for pleasure and scientific interest

A large number of wild animals were obtained from parks and enclosures for wealthy private individuals and sometimes for emperors (28). These animals (antelopes, various carnivores, birds, etc.) were captured in the wild, most of them in Africa, and then kept in cages that were transported by land, and then by ship, to Rome.

Animals transported to Rome for public entertainment

The earliest recorded beast shows in Rome are the *venationes*, public spectacles that featured animal hunts, given with lions and leopards in 186 BC by Marcus Fulvius Nobilior and the public games organised by the *curules aediles* (officials ranking between tribunes and praetors) in 169 BC, when 63 *Africanae bestiae* (lions and leopards), 40 bears and a number of elephants appeared in the Circus Maximus (28). They were followed by many other shows over the centuries that followed, each of them expecting to be the largest ever organised. In 55 BC, Pompey displayed about 20 elephants, 600 lions, 410 leopards and a rhinoceros; the future Emperor Gordian I exhibited 1 000 bears, and in 281 AD, on the occasion of a triumph, Probus exhibited 1 000 ostriches, 1 000 stags and 1 000 boars.

As in the case of animals intended for private parks, these beasts were captured in their homelands and transported by land and boat to Rome. However, as most of them were ferocious animals, their capture and transport were more difficult. According to Toynbee, the preliminary process of catching them alive and then transporting them by land or sea alive and healthy to their destination must have been organised on an enormous scale and with great professionalism. Entire armies of professional trappers and hunters, keepers, trainers and veterinarians must have been maintained for this dangerous work. After all stress of travelling, the animals were often not in good condition and many had to be killed because they refused to leave their cages (28).

There is no precise information on the way in which African captive wild beasts were transported by land. Except for elephants, they were probably pushed into specially designed vans (Fig. 1) that were then pulled by horses or mules to the nearest port and transferred onto ships. The journey between Carthage and Rome was long and risky and took three days. Vessels were often delayed by bad weather or shipwrecked. Animals transported in such conditions were often sick; on one occasion, crocodiles refused to eat and had to be killed (28). Animals caught in Europe (mainly in Germany or Dalmatia) were shipped from the southern ports of Gaul in spring or summer. In a letter written in 394 AD to his friend Aurelius, the Roman statesman, Symmachus, deplored the deaths of a large number of bears during a shipwreck and asked to be reimbursed. At that time, the wild beasts (mainly bears) were usually captured in Dalmatia and then transported in Apulia by state-owned (*cursus publicus*) or private vans (*clabularia*), they then crossed the Adriatic Sea by boat and were again loaded onto cattle vans to reach Rome (8).

Figure 1
A mosaic of Massimiliano Erculeo's villa in the city of Piazza Armerina (Sicily) representing the capture and transport of wild beasts by land and sea from Africa to Rome, in the 4th century

Transport of elephants

Elephants captured in the forests that then covered Numidia and Mauritania, reached the Mediterranean shores on foot with their cornacs, handlers or 'mahouts', before crossing the sea on large boats. According to Pliny the Elder, 'they did not agree to board (*non ante nauis conscendere*) until their cornacs have sworn to them that they will be back one day' (12). When Hannibal's army tried to reach Rome across Spain, southern Gaul and the Alps, the main problem was to cross the Rhone River. According to Livy, the elephants were probably forced to embark on two rafts covered with earth and grass; some of them fell into the river, but were able to swim to the other bank (17).

Transport of horses

Like elephants, horses were capable of travelling long distances. They were often transported in the *clabularia* of the *cursus publicus*, provided they had received an official authorisation (*litterae tractoriae*) to do so. However, in the case of high-priced animals (particularly the racehorses of the *quadrigas* exported from Spain to Rome), their rich owners preferred to avoid exhausting their animals on the roads. In this case, the animals were transported across the Mediterranean by ship, but had to wait until the spring to avoid the risk of the ship running aground (12).

Animal transport in the Middle Ages

Transport of animals in peacetime

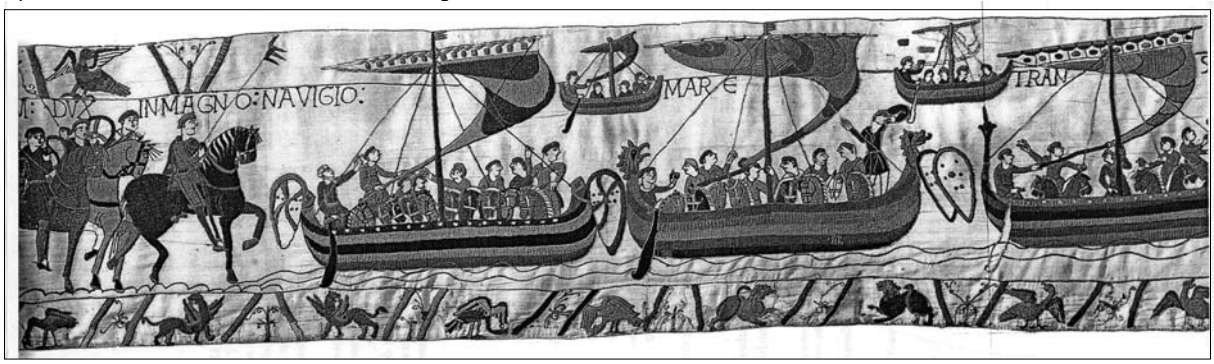
The earliest documented animal transport in the medieval period is the story of an elephant sent as a gift from Harun al-Rashid, sultan in Baghdad, to the Emperor Charlemagne with whom he wanted to create and alliance against the Turks. Having reached Egypt on foot, the pachyderm boarded in Egypt (Alexandria) and arrived in Pisa (Italy) in 801. From there, he walked to Pavia to meet Charlemagne in Italy. He was then re-embarked in Genoa, sailed to Marseilles, and from Marseilles walked again to Aachen where he arrived in 803.

From the 13th century until the end of the Middle Ages, most goods were transported on waterways, i.e. on rivers, canals or the sea. Among a large variety of products, the shipment often included small or large live animals, such as cattle or horses. Many ships linked the Mediterranean cities (Naples, Genoa, Marseilles, Valencia) from the Bosphorus to Gibraltar, and then moved to northern Europe and the great fairs of France or Germany (in 13). Arabian horses were part of such exchanges to create genetic improvements in horses of northern Europe. The transport of Arabian horses was usually forbidden and severely controlled by the Spanish 'Cortès', who wanted to retain their monopoly. Catalonia also prohibited the sale of their animals to the infidels of the Islamic cities of North Africa (in 14).

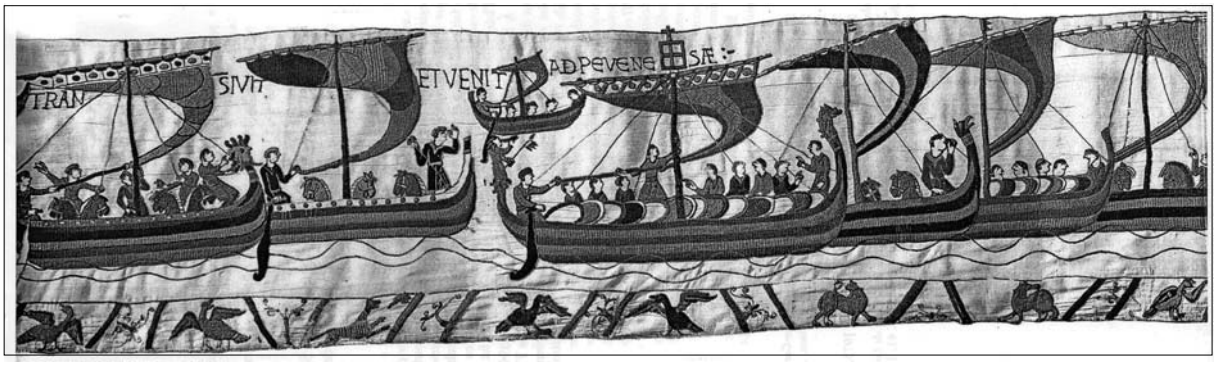
Transport of animals in wartime

The most famous military expedition in the Middle Ages was the Norman conquest of England by Duke William in 1066, which is illustrated on the Bayeux tapestry. This 70 metre-long (231 ft), tapestry, also referred to in French as 'Queen Mathilda's tapestry', offers a splendidly vivid depiction of the conquest, which includes the boarding and landing of 200 war horses (Fig. 2). During the

a) The fleet of Duke Williams set sail for England



b) The Duke's ship lands at Pevensey



c) The soldiers disembark the horses

Figure 2
The Bayeux tapestry

crusades, the European knights also needed a large number of horses. These animals travelled to the nearest European port (Marseilles, Genoa, Venice) and were then embarked for Palestine on specially designed ships. Boarding, sailing and landing were often difficult, and have been described at length in the medieval chronicles, namely by Villehardouin for the 4th Crusade (1200-1204) and by Joinville for the 7th Crusade (1248-1252), who reported the transport of horses from France to Jerusalem as follows: knights, sitting on their horses left from Auxonne (north of Lyons) and followed the boats on which their weapons and war material was loaded. Having reached Marseilles, the horses embarked on the ship by a large door opened on one side of the boat. This door was thereafter closed and sealed 'like a vine cask, because when the ship reaches the open sea the door is under the water'. Then all the passengers sang the *Veni Creator Spiritus* before the departure 'because anybody who goes to sleep at night may be at the bottom of the sea in the morning' (18).

Transport of animals from Europe to the Americas and Africa

Apart from the dog and some avian species, namely turkeys and ducks, no domesticated animals were present in the Americas before colonisation by the Europeans: American populations were not used to eating mammals, and did not use them as draught animals. Horses were transported for the first time from Europe to the Americas on the second visit of Christopher Columbus. Horses were pulled onto the deck of the ships using ropes (Fig. 3), then secured in a stall specially designed to avoid any injury during transportation (Fig. 4). On 25 September 1493, several ships left the port of Cádiz with more than 1 400 men and women (soldiers, pioneers, priests). Following a specific request of the Catholic Kings of Spain, 20 stallions, 5 mares 'and other domestic animals including cattle, pigs, goats, sheep and dogs' also boarded the ships, that reached La Hispaniola on 28 November.

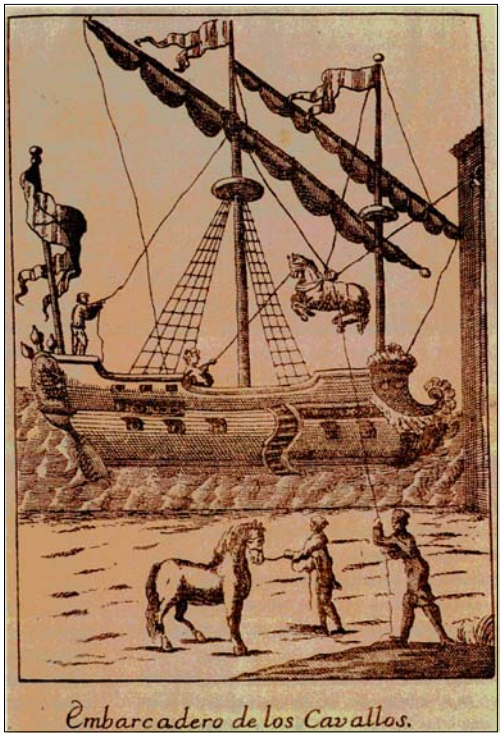


Figure 3
European horses boarding a ship bound for the Americas
Escuela de a cavallo, Salvador Rodríguez Jordán. Madrid, 1751 (in 21)

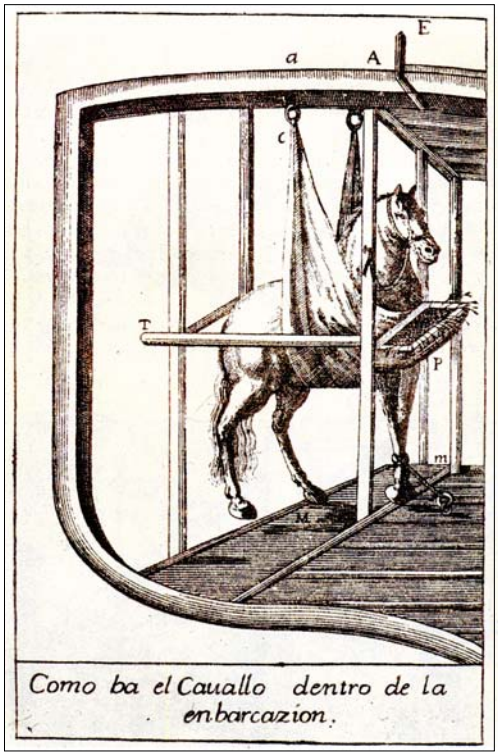


Figure 4
A European horse secured on the deck of a ship bound for the Americas
Escuela de a cavallo, Salvador Rodríguez Jordán, Madrid, 1751(in 21)

All the animals were destined to form the nucleus of the future animal husbandry in the West Indies, where very few domesticated mammals apart from dogs existed. These first imported domestic animals were followed by many others, as follows:

- 9 April 1494: 6 mares, 6 donkeys , sheep, sows and chickens
- 23 April 1497: 14 mares and 21 draught horses, accompanied by an 'albeitar' (veterinarian), Cristóbal Caro
- 30 March 1498: 40 horses and several donkeys
- 13 February 1501: 10 Arabian horse stallions
- 25 December 1507: 106 mares (with special authorisation as there was a shortage of equids in Spain at that time)
- 1536: 200 war horses, for the conquest of New Granada by the Spanish Army
- 1538: 500 additional horses for the conquest of Florida, which were disembarked in Cuba

1541: 46 war horses to be used for a military expedition in Brazil under the commandment of Cabeza de Vaca (reviewed in 21).

Little documentation is available on the transport of animals to Africa. Most domestic animals were either natives of the continent or came on foot from Asia through the Middle East. Some reached Africa by sea and entered by way of the Mediterranean and other coasts. When big steamships became available for the transportation of animals in large numbers, cattle and horses were brought to Africa for civil or military purposes. It was by this means that rinderpest was introduced in the late 19th century into East Africa and spread to South Africa, killing millions of wild or domestic ruminants (7). In a concerted effort to restock kraals and ranches after this 'great rinderpest pandemic', farmers imported large numbers of live animals at the turn of the 20th century, including two-humped camels from India. For example, in 1913, 75 165 animals (cattle, small ruminants, horses, donkeys, etc.) were imported into Southern Rhodesia alone. Unfortunately, the inadvertent importation of animals that were incubating diseases, or of animals that were naive to local infections, precipitated outbreaks of diseases that were hitherto unknown. Redwater (bovine babesiosis) was probably introduced with cattle from Australia quarantined in Mozambique; glanders was imported from Hungary and New Orleans; contagious abortion (bovine brucellosis) and epizootic lymphangitis were introduced from unspecified countries. Foot and mouth disease also threatened Southern Rhodesia, but was fortunately averted, when cattle were imported from Argentina (22).

Transport of animals in Asia and the Pacific

First transport of livestock to the Pacific

In 1787, the British Government decided to establish a convict detention colony as far from Britain as possible. For this purpose, they despatched a fleet of eleven vessels under the command of Captain Arthur Phillip carrying 1 030 people including 548 male and 188 female convicts. Setting sail from Portsmouth on 13 May 1787 the flagship *HMS Sirius* entered Port Jackson (Sydney Harbour) on the afternoon of 26 January 1788 completing a voyage of 25 583 km. On the voyage the fleet made several stops, the last port of call being the Cape of Good Hope where the opportunity was taken to make the final preparations for the voyage to Botany Bay in New Holland. Provision had been made while the fleet was visiting the Cape of Good Hope to purchase livestock and poultry. These animals were exotic to the environment of New Holland where the indigenous fauna were mostly marsupials. The Colonial Secretary, David Collins, listed the animals that were purchased, namely: horses: 1 stallion, 3 mares and 3 colts (foals); cattle: 2 bulls and 6 cows, 44 sheep, 4 goats, 28 pigs, poultry etc.

In total, there were 500 animals of various species on the ships. The fleet left the Cape of Good Hope on 12 November 1787 and, after 77 days, at sea arrived at Botany Bay. Surprisingly the stock losses were low (9).

Transport between Asia and the Pacific

The early colonial governors considered India the best country from which to obtain provisions and livestock. Governor Phillip sent his Lieutenant Governor, Philip Gidley King, to England to report to Parliament on the state of the colonies in New South Wales and Norfolk Island. On the return voyage to Australia, King purchased livestock at the Cape of Good Hope (3 bulls, 23 cows, 68 sheep, 11 swine and rabbits and pigeons) (24). Gradually, word spread among the traders and merchants of the world sea powers that profits could be made in Port Jackson and ships with cargoes on speculation began to call at the port. In addition to goods of trade, livestock formed a large part of the cargoes coming into the colony.

Captain William Wright Bampton, the Master of the *Shah Hormuzear* carried a shipment of Bengal ewes and rams from India when he returned to Port Jackson in February 1793. In the cargo were 110 Bengal sheep, the survivors of over 200 animals. There were only about 100 sheep in the colony at that time that descended from 50 Africander (fat tailed sheep) and 12 sheep from Calcutta. Bampton's sheep were prolific breeders and consequently, from the time these sheep entered the colony, Bengal sheep and their crosses initially comprised the greater proportion of the sheep breeds. However, there was a more pressing need in the colony for more cattle. There were less than 309 cattle in the colony (2). Bampton offered to return to India to obtain more cattle. A contract between Bampton and Lieutenant-Governor Grose was entered into (4) and Bampton was to introduce over 100 head of large horned cattle aged over two years and fit for draught or breeding purposes. The commanding officer of the Indian port was to oversee the conditions and provide a certificate that the cattle were stowed on the ship and secured according to the contract. Grose also contracted with Bampton to call at Norfolk Island on his voyage to India with provisions for Lieutenant-Governor King and to provide him with six Bengal ewes and two rams (19). On his own initiative, Bampton had made a great contribution to the livestock of the colony; in the *Shah Hormunzear* in 1793 he imported 100 hundred sheep, about the same number as those already in the settlement. Two years later, in the *Endeavour* he introduced 130 cattle from India with the loss of only one animal. The cattle herd of the colony at the time only numbered 44 head (3) He devised a management system under which cattle could be shipped to the colony without the disastrous losses that were commonplace at the time. Until 1793, out of the cattle shipped to New South Wales most were lost during passage. He made a useful contribution to navigation by pioneering the route to Batavia between Cape York and New Guinea.

In the cargo were 162 cattle, horses and asses and 110 Bengal sheep. In 1795, 131 head of cattle were imported from India and formed the basis of the government herd. In the next five years, 296 cows arrived from the Cape of Good Hope and by 1804 the official herd numbered 2 000. In August 1804, 139 cows, one bull and 60 oxen were shipped on the *Lady Barlow* from Calcutta to Hobart (11).

Transport from Europe and the Americas: the role of the Australian land companies

Several land companies played a crucial role in the transport of animals from different regions of the world to Australia and the Pacific The Australian Agricultural Company became the largest horse stud in the colony, and also imported Shorthorn cattle. When sheep were taken to the inland properties, the Company resorted to the expedience of importing mules and asses from South America, and mule trains with Peruvian muleteers carried the wool over rough mountain passes to the east coast (15). The Van Diemen's Land Company was the largest importer of Merinos in 1829 when the Company imported over 1 000 sheep, mostly from Saxony but also 170 Merinos from England. The Cressy Company was formed in 1825 to breed horses. They loaded the animal purchases into the ship, the *Albion*, that set sail on 17 November

1825 with 28 horses including the thoroughbred stallions Alladin, Bolivar and Buffalo that survived the voyage from England and whose progeny still feature in Tasmanian horse bloodlines today. There were also 20 head of Shorthorn and Hereford cattle. The Henty family decided to immigrate to Australia and chose the Swan River Settlement, calculating that if they arrived before the end of 1829 they would be entitled to 80 000 acres in land grants. James Henty was to migrate first with his two younger brothers. Under private charter, the Henty family loaded the full-rigged ship of 340 tons, the *Caroline*, with plants, cuttings and precious animals, consisting of pure bred horses, prize cattle and rare Merino sheep (6). The *Caroline* was loaded with bales of hay and containers of water on the top deck amongst which were pens of rabbits and chickens. Stabled on the main deck were the horses, cattle and sheep (review in 23). The Henty family venture in Western Australia proved disastrous and, after two years, James Henty salvaged what he could and set sail for Van Diemen's Land, arriving in Launceston at the end of February 1832.

Thomas Henty and the rest of the family and livestock sailed from England on 17 November 1831 in the *Forth*, arriving in Launceston in April 1832. The total number of Merino sheep imported by Thomas Henty into Van Diemen's Land was 1 500, as cited by James Henty in a memorial sent to the Secretary of State on 19 August 1832.

Transport of cattle and camelids, accidents and health associated risks

Cattle that arrived with the First Fleet in 1788 after surviving the voyage from the Cape of Good Hope were two bulls and three cows. The Second Fleet brought 11 cattle from the Cape of Good Hope in September 1791 and another four cows arrived from the Cape in June 1792.

Unfortunately the losses of cattle on voyages up to 1793 from the two main supply sources, the Cape of Good Hope and India, were unusually high and only 36 cows survived while the losses en route were 104 head. In 1830, Mr Campbell (a colonial trader) wrote to Governor Darling recording that he had imported more than 2 000 head of cattle (5). As it has been the case in the United States fifteen years previously, contagious bovine pleuro-pneumonia (CBPP) was imported into Australia through infected cattle (7). In 1858, the disease was introduced to Victoria in a heifer imported from Britain and, within four years, had devastated the cattle population in eastern Australia. At the peak of disease spread, it was estimated that over 1.5 million head of cattle had died. CBPP in Australian cattle herds prevented the export of live cattle until CBPP was eradicated in 1972.

The first camel introduced into Australia arrived at Port Adelaide on the *Appoline* on 12 October 1840. Camels were imported into Australia from Karachi between 1893 and 1896. The camels were introduced for their use as transport animals on the western Australian goldfields and a total of 4 624 were imported. An additional 500 were introduced in 1907 and 9 animals were found infected with *Trypanosoma evansi* and were destroyed.

As early as 1803, Governor King suggested the introduction of llamas. However there was no serious attempt until 1853 when Charles Ledger suggested that alpacas and llamas be introduced into Australia. To obtain the animals, Ledger had to evade the ban passed by the Peruvian government on export of llamas and alpacas. Ledger assembled approximately 600 animals in a mixed herd near the Bolivian border. From there he drove the herd overland to Argentina and then over the Andes mountains into Chile. The difficulties of the journey and the severe snowstorms in the Andes caused high losses so that Ledger arrived at Copiapo on the coast of Chile with 336 animals of his original herd. He shipped these on the *Salvatore* and eventually reached Sydney in 1859 with 276 animals in the herd.

Unfortunately, by the time Ledger's animals arrived in Australia, alpacas and llamas had been introduced to Victoria in 1853 and to South Australia in 1857 and 1858. Ten llamas came to Sydney in November 1858 and were sold and sent to Moreton Bay (now

Queensland). As a feat of persistence and endurance, Ledger's project should have excited more publicity in the history of livestock introductions (16).

Recent history of animal transport for civilian or military purposes

Transport of animals for general purposes

In the 18th century and even 19th century as well, animals were most often accompanied on foot by their owners to markets, fairs or the abattoir, even over quite long distances. This was usually the case for large animals (cattle and horses), but also for pigs, sheep, goats and even turkeys. In the 19th century, thousands of these birds were regularly brought from various regions of France to Paris, 'led by a man with a long stick', for a long journey of 55 leagues (approximately 220 km), usually travelling two leagues each day (1). Some prize animals (racehorses, fatty beef cattle, etc.), or dangerous animals (e.g. bullfighting bulls) were nevertheless transported in vans or by waterway.

In the 20th century, new means of transport proved more convenient for animals. Among these, was the railroad which was used on a large scale. Complete treatises have been written on this subject, namely by Rey in 1875, that specified the maximum number of animals acceptable in a wagon (6 cows, 15 calves or pigs and goats), the arrangement of these wagons, the best way of loading the wagon, how to take care of the animals during the journey, the responsibility of the company in case of injuries or death of an animal etc. (25). Aircraft have also been used for particularly valuable animals (thoroughbreds, genetically improved livestock, birds, fish, etc.) and for some wild species.

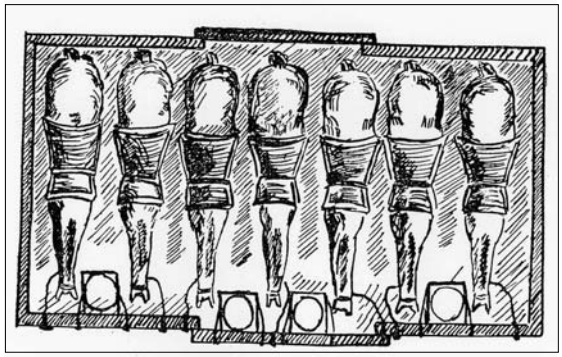
Transport of animals for military purposes

In times of war, long distance transport of horses and mules to distant battlefields has sometimes proved crucial to the outcome of battles. During the wars of the last century, thousands of animals were transported by land (in trains or trucks), or across the seas.

Transport by train or truck

Trains were not used for military transport before the Crimean War, except for the transport of 18 000 soldiers and 5 000 horses from Moscow to St Petersburg in 1853 (20). In 1854, 3 000 horses were sent from France to Crimea in specially designed wagons. In less than five minutes, 6 to 8 horses could be loaded onto a wagon; a horseman sat in front of them (Fig. 5). Armies also used trucks to transport horses during the Second World War. Trained staff were able to embark six horses or mules in three minutes in a General

a) Seven horses being loaded onto a wagon



b) A horseman tending to a horse during transport

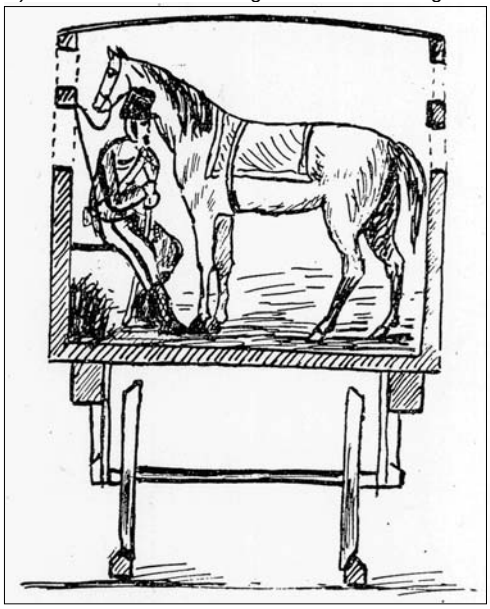


Figure 5
French Army horses sent by train to the theatre of operations in Crimea in 1854
(after Lepère [20])

Motor Company-type truck, a standard type of truck produced in the United States and used at that time. Solid boards and ropes were fixed on each side of the platform to avoid injuries or falls (10).

Transport by ship

During the Crimean War, 13 150 horses were transported from Marseilles to Gallipoli. About 25 animals boarded each ship, protected from the impacts against the walls by wooden boards set behind the rump (Fig. 6). The average losses of animals during the journey were less than 2%. During the First World War (1914-1918), around 500 000 horses were shipped to Europe from the United States of America.

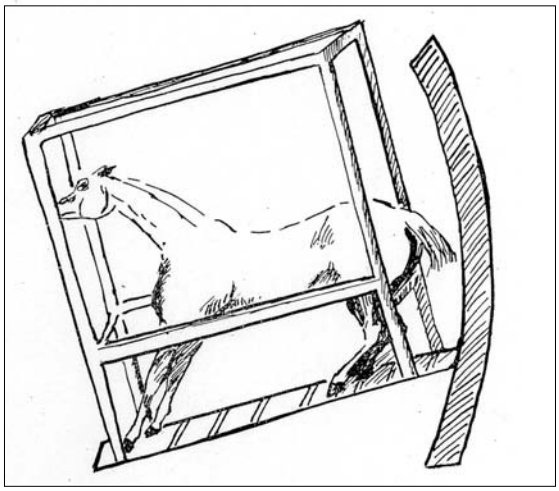


Figure 6
French Army horses sent by ship to the theatre of operations in Crimea in 1854
(after Lepère [20])

The demand for horses from Australia in the late 19th and early 20th centuries led to a massive increase in horse breeding. The peak decade of exports was between 1910 and 1920, with more than 129 000 horses exported from Australia to the Middle East and Europe. The horses were well secured in stalls, decks were clean and the animals groomed and massaged. Fresh air was directed into the horse decks. Animals were loaded on three decks. The upper deck was open to air and, on occasion, the sea. The middle deck was well ventilated and lit. The lower decks were in two holds, dark and airless and ventilated with difficulty by canvas air shutes and ventilation shafts. Each horse was in a stall, set transversely to the length of the ship. Stall fittings were moveable (24).

Again, in 1939-1940, horses were transported to Europe from America and more than 3 000 animals were bought by the 'French Purchasing Commission' before the armistice. Animals were placed on the deck, or in the first and second holds of the ship. Half a thousand horses were embarked in less than four hours. Although the journey (20-21 days) was longer than usual, to avoid the German war fleet, most animals arrived in good shape (26).

It should be noted that military horses most often travelled on the deck of the ship, and were thus very often splashed by waves in case of bad weather. In one instance, several young horses that were silent carriers of strangles expressed the clinical disease during their transportation from France to Morocco and spread the infection among the indigenous naive horses (29).

Transport by aircraft

Aircraft have rarely been used in European wars for animal transport, but were used on several occasions during the Second World War. To combat the Japanese Army in China, there was no other means of transport for horses, mules and ponies besides the aeroplanes of the Allied troops. Between December 1944 and January 1945, the C.47 aircraft of the 10th Army Air Force transported 1 595 animals 'over the hump' of the Himalayas and, again in February 1945 with 1 100 horses and mules. These animals were vital to carry the weapons and heavy radio transmitter-receivers, which provided the only link between troops fighting in the jungle and their headquarters. To avoid the braying of the mules, all of them underwent surgery (the so-called 'Williams operation') to sever their vocal cords (27).

Conclusion

From time immemorial, people and animals have shared a common destiny, living, fighting, working and hunting together. Travelling together was also part of their

community, as sometimes humans needed animals to transport them and their belongings, and sometimes humans had to organise the transportation of horses and other animals over long distances by land or water to carry those animals that could not move themselves. Long-distance transport of horses, cattle, sheep, goats, pigs and poultry were part of this joint venture, as these animals were essential for any successful human settlement, as were wild beasts transported from African or European forests for public entertainment. When Europeans crossed the Atlantic, or settled in the Pacific and the Indian Ocean, the transport of animals became all the more important for the success of conquests and the establishment of new colonies. Most of the techniques used to load animals into carriages, trains and trucks or to board them onto ships have been the same throughout the centuries, and were based on a thorough knowledge of the anatomy, physiology and the psychology of the different species.

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