

ON THE WATER TRANSPORT OF ANIMALS WITH SPECIAL REFERENCE TO DENMARK

О ПРИЈЕВОЗУ ЖИВОТИНЈА ВОДЕНИМ ПУТОВИМА С ПОСЕБНИМ ОСВРТОМ НА ДАНСКУ

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SUMMARY

Transport of animals by water is a very old way of transport because it is relatively cheap and safe, with a minimum loss of animals. Waterways have been used for the transport of living animals and various goods from ancient times, for example in Ancient Egypt and the Roman Empire. Later, Vikings were so successful in their conquests because they always had trained horses aboard. It is believed that the colonization of America was possible because Spaniards were also bringing many horses with them.

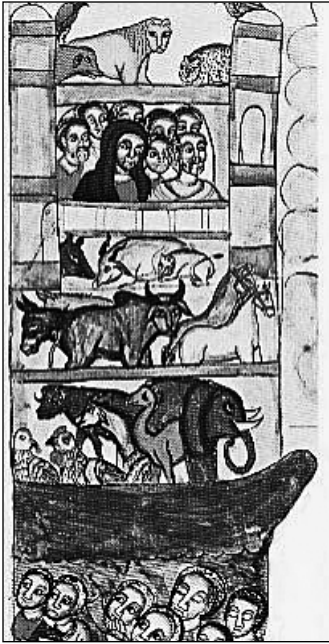
Danish possessions in the Caribbean owe much of their economic success in the period between 1820 and 1920 to permanent supply of cheap mules and other equides from South America. Mules were used for agricultural purposes and for work in sugar-cane mills. In the 20th century, a significant number of animals was transported to German and British colonies in South Africa. During the First and the Second World War, animals were also transported by water; measures were taken to meet the fundamental physiological requirements, and a veterinarian accompanied animals on long voyages. These precautions resulted in minimum transport losses.

Key words: *animals, waterways, transport, veterinarians*

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Noah's Ark
Noina arka

INTRODUCTION

Waterways have been used for the transport of living animals and various goods from ancient times. This form of transport was relatively cheap and safe, and losses during transport were minimal. Museums around the world contain many exhibits presenting the sea transport of animals. This paper presents some interesting facts in relation to this subject, both from ancient and modern times.

HISTORICAL OVERVIEW

Several thousand years ago in Ancient Egypt the river Nile was used to transport goods and living animals, especially camels. Since camels were the main means of transport at that time, they became a frequent motif of paintings and other artefacts.

Living animals were also transported across the Mediterranean Sea, mostly to Rome, the centre of the Roman Empire. A great number of wild animals needed for entertainment and games were transported by the sea to any of the numerous amphitheatres. As fundamental physiological conditions were not met during the voyage, two thirds of animals would die.

Throughout history, people often migrated by water. For example, Iceland was populated over 1,000 years ago, when about 100 Viking ships sailed in from Norway. Animals such as horses, cattle, sheep and poultry, came along with whole families. Over three quarters of all ships embarking on this voyage sank and only one quarter reached their destination.

Waterways played a crucial role in wars too; the successful conquest of Britain by Vikings can be attributed to the fact that during their invasions Vikings had a sufficient number of hardy horses, which were transported from the continent. The Bayeux Tapestry, 70 meters long, depicts scenes commemorating the Battle of Hastings in 1066.

The success of the Crusades also depended on horses, that were often transported by water. Various drawings and oil paintings from this period provide information about existing horse breeds and those used in wars. Camels, wearing a special metal head protection, also participated in the Crusades.

Historians believe that the colonization of America was relatively simple because Spaniards transported the horses they needed for the invasion by vessels. Well-designed slings were used for loading and unloading horses.

Almost 200 years ago, Venice was receiving supplies of live sheep for meat from Istria and Dalmatia. However, after a relatively short voyage across the Adriatic Sea, the sheep were so exhausted and dehydrated that it took them 14 days to recover. Prior to being sent to the slaughterhouse, they were recovering on the island of Lido. There, sheep's urine was collected to be used in the manufacture of saltpetre for gunpowder (Giormani, 2004).

Except for fresh fruit and vegetables, which were needed to prevent scurvy on long voyages, seamen were also taking along live animals (pigs, sheep, poultry) and eggs. In addition, they were catching fish and birds that accompanied ships to make their diet more varied than dried food



Transport of camels on the Nile

Prijevoz deva na Nilu

On animal losses during sea transport in some wars
Gubici životinja prilikom prijevoza brodovima u nekim ratovima

War Rat	Number of animals on board <i>Broj ukrcanih životinja</i>	Losses <i>Gubitak</i>
American Revolutionary War (1776-1783) <i>Američki građanski rat (1776.-1783.)</i>	845	367
Chinese-Japanese War (1894-1895) <i>Kinesko-japanski rat (1894.-1895.)</i>	2.500	About / oko 600
Spanish-American War (1898) <i>Španjolsko-američki rat (1898.)</i>	2.500	56
Boer War (1899-1901) <i>Burski rat (1899.-1901.)</i>	194.622	8.116
WWI (1914-1918) <i>I. svjetski rat (1914.-1918.)</i>	66.071	660
WWII (1941-1945) <i>II. svjetski rat (1941.-1945.)</i>	20.815	60 + 1.152 (three torpedoed ships) <i>(potapanje 3 broda zbog torpediranja)</i>

alone. Skilful cooks knew which products of animal origin could be preserved longer, which was very important because there was no refrigeration at that time. Refrigeration was introduced only 100 years ago on *Titanic*, whereas nowadays it is widely used on cruisers.

In the 18th century, a large number of animals were transported from Great Britain to India and vice versa. These animals were either needed for military purposes or for the improvement of breeds. In the 19th and early 20th century, Great Britain and Germany transported horses to their South African colonies, engaging veterinarians to accompany the shipments.

Rapid industrialization of Europe in the 18th century resulted in the need for large quantities of cheap meat. This need could only be met with transport of living animals from the overseas countries to large European industrial cities such as Budapest, Vienna, Berlin, Hamburg, towns in the German region of Ruhr or the English cities such as London, Liverpool,

and Birmingham. There were always some animals that died during the transport, because nobody thought of the spread of infectious diseases, primarily cattle plague. In 1863, the First International Veterinary Congress was held in Hamburg, where the participating countries discussed how to prevent the spread of diseases during transport by water or rail. The Congress was convened by John Gamgee, English veterinary surgeon (1831-1894). The next congress, which took place in Vienna (1865), dealt with the same issue. The old way of transporting living animals needed for supplying military units was partially abandoned at the end of the 19th century. In Russia, cattle plague was eradicated after 1880, when cattle began to be transported by rail.

During the Napoleonic wars, the first attempts were made to preserve food by bottling, so less living animals as the source of fresh food had to be taken on voyages.

In the 19th century, live cattle were transported by water, which was a cheaper way of transport than land transport. So, Vienna was receiving pig supplies from the Danube region.



Animal transport over the Mediterranean, illustrated on Traian's Column in Rome

Prkaz prijevoz životinja Mediteranom u rimsko doba na Trajanovu stuupu u Rimu



Thanks to overseas transportation of horses, Vikings could quickly advance on occupied land and conquer Great Britain

Zahvaljujući konjima Vikinzi su brzo napredovali u prekomorskim osvajanjima i lako osvojili Veliku Britaniju.

After the First World War, Argentina would deliver cheap beef to Europe: at first it was live cattle, and when the refrigeration technology was improved, it was frozen beef. This minimised the risk of infectious diseases.

After the Second World War, large amounts of horses and cattle from Western Europe were transported to the USSR. This was a part of war reparations to the Soviet Union, but cattle were also purchased directly to increase milk production. Animals, accompanied by Russian veterinarians, were mostly transported by the sea. There were also Danish veterinarians on board, but the Russians were not allowed to have any private communication with them. These voyages from around the middle of the 20th century were described by a Danish veterinarian, Ebbe Christensen (Christensen, 1949). According to Christensen, Russian veterinarians insisted that the temperature of animals should be measured twice a day and that thermometers should be kept in a disinfectant for 15 minutes. They also insisted that the animals should not suffer from fasciolosis, which was, of course, difficult to achieve.

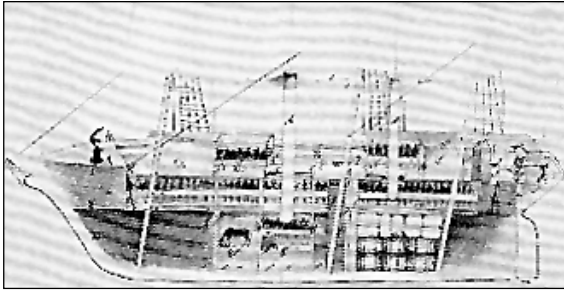
Military veterinarians who participated in WWI and WWII described their experiences in relation to the transport of animals for military purposes. The most interesting are the statistics of sick and dead animals transported by the sea, which show that losses of mules were much smaller in comparison with other species.

After WWII, the United Nations Relief and Rehabilitation Administration (UNRRA) provided aid for the rehabilitation of agriculture in Western Europe, especially in the period when German? men were still in Russian captivity, and no agricultural machines were available, so women had to cultivate land using mules.

Let us also mention one of the best known US military veterinarians, James H. Steele, a pioneer in veterinary health, whose task was to look after human and animal health.

Sometimes complete shipments of animals suffered misfortune: the animals died of suffocation in a disastrous fire or the ship stranded and the animals could not escape so the official veterinarian had to euthanize them, as was the case in the vicinity of the Danish island of Bornholm some 30 years ago.

Long transports of live animals, which lasted for several weeks or even over a month, stopped after demonstrations of animal protection organi-



Overseas transport of working horses from Denmark to East India colonies from 1850 to 1920

Prijevoz konja za rad morskim putem iz Danske u kolonije u Istočnoj Indiji od 1850. do 1920.



Transport of horses and mules during the WWII

Prijevoz konja i mula morem tijekom II. svjetskog rata

sations against the transport of several thousand sheep from New Zealand and Australia to Arab countries about 30 years ago. Since then live cattle have not been transported any more, but have been slaughtered in the country of origin and frozen meat has been sent to customers around the world.

If some high-breed animals needed for breeding or exotic animals are to be delivered to zoos, they are transported by air and if necessary by road. Various circus animals are often transported too. When they travel from one continent to another, the circus management usually hires a whole ship just for the circus, so as to make the voyage both for the animals and the artists as comfortable as possible and to avoid losing very expensive and well trained animals.

SOME SPECIAL CASES OF ANIMAL TRANSPORT

Except in a few rare cases, one animal alone is never accompanied by a veterinarian. Nowadays, a veterinarian would accompany large animals

transported by air (okapis, giraffes, rhinoceri) on the route from Africa to Europe or back.

An interesting case of animal transport from the past is the transport of an imperial cow from St. Petersburg to Denmark. This “lady” lived on the fifth floor of Hermitage and her only “duty” was to provide healthy milk for the Russian imperial family. Namely, Empress Dagmar seriously feared that any member of her family, particularly any of her grandchildren, would be infected with tuberculosis by milk. Since the Empress, daughter of the Danish king, visited her family in Denmark every year, she took the cow and a veterinarian along to look after the cow.

REFERENCE TO DENMARK

At the turn of the Middle and New Ages, Denmark was a large supplier of fattened oxen for the markets of Holland and Hamburg in Germany. The animals that were exported to Germany from North Jutland (Nordjylland) would graze along the way for a few weeks before they reached Hamburg. On the other hand, the animals which were delivered to Holland were transported by the sea from one of the Frisian harbours. This way the cattle would reach their destination in good shape without hurting the hooves (Gijsbers, W. and Koolmees, P., 2001).

Denmark and Norway used to transport working horses by the sea to their colonies in East India (Tranquebar) in the period between 1850 and



Marc Chagall: The Cattle Dealer, 1912

Marc Chagall: Trgovac stokom, 1912.

1920. These two countries were also buying horses, mules, and hinnies in large quantities in South America, and transported them to their possessions. The animals were used to transport sugar cane, cultivate land, and work in mills. Due to their natural resilience, stamina, and longer life span, hinnies and mules were superior to other working animals. The voyages lasted 40 days, so about one hundred hinnies needed large amounts of water. Since so much water could not be taken aboard, rainwater was collected in oilskins stretched on the ship deck.

Large shipping companies always hired a veterinarian to accompany larger shipments of living animals, so as to reduce the number of sick and dead animals during transport, and to avoid occasional complaints about inhumane treatment of transported animals (too many animals on board, inadequate accommodation). Animals that died during transport were simply thrown into the sea (Maehl, 1873). Veterinarians accompanying the shipments were also inspecting hay, food concentrates, and water quality. Being responsible for the health of animals on board, veterinarians were authorised to stop any loading aboard of old and cachectic animals. They would not have a wide range of drugs at their disposal but laxatives, camphor, and some surgical instruments (e.g. bladder probe). During the voyage, cattle were examined twice a day or more, if necessary. Measures were taken to prevent hyperthermia, constipation, bladder paralysis, colics, and possible injuries. Still, after long and exhausting voyages many animals lost weight, mostly as a consequence of dehydration. The greatest problem was the high concentration of ammonia in the air, which influenced the general condition of animals, their respiratory organs in particular. Since ships were not disinfected after animals had been unloaded, ships themselves became one of the causes of subsequent infections. Another cause of infections was stale water; water which was kept in containers and in the heat for some time was not suitable to drink any more. Some veterinarians described their adventurous voyages, so other veterinarians could make use of their experience (Arup, 1863, Maehl, 1893).

The situation improved in the 20th century when sailing ships were replaced by steamers, and voyages became shorter and transport safer.

Between 1850 and 1920, Denmark was importing working horses from Russia, Baltic countries, and Iceland by water, and exporting pigs and cattle for slaughter to England. A Danish veterinary inspector was permanently employed in Newcastle (Jens Arup) with the task to examine animals that were either imported or exported.

CONCLUSION

Thanks to the experience gathered over many years, especially in wars and WWII in particular, it can be concluded that the sea transport of animals has become a rather safe way of transport and that transport losses are minimized when optimum physiological requirements are met and the shipment is accompanied by a veterinarian who can have the situation under control.

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SAŽETAK

Prijevoz životinja vodenim putovima poznat je od davnina jer je takav prijevoz od uvijek bio razmjerno jeftin i siguran, a gubici za vrijeme prijevoza minimalni. Poznato je da su se vodeni putovi za prijevoz živih životinja, kao i raznih namirnica koristili već u kulturama starog vijeka, npr. u starom Egiptu i Rimskom Carstvu. Vodeni putovi imali su ključnu ulogu i u ratovima pa se tako uspjeh Vikinga može pripisati tome što su u ratnim pohodima imali dovoljan broj treniranih konja koje su dopremali s kontinenta. Smatra se da je i kolonizacija Amerike bila jednostavna jer su Španjolci prekomorskim putem vodili velik broj konja. Gospodarski procvat prekomorskih posjeda Danske u razdoblju između 1820. i 1920. pripisuje se upravo dobroj opskrbi mulama i drugim ekvidima dopremljenim iz Južne Amerike. Te su životinje bile potrebne za rad u poljoprivredi i mlinovima te pri obradi šećerne trske. U XX. stoljeću znatna količina životinja bila je transportirana u njemačke i britanske kolonije u južnoj Africi. Transport životinja obavljan je i za vrijeme Prvoga i Drugoga svjetskog rata, pri čemu je vođena briga o zadovoljavanju osnovnih fizioloških zahtjeva, a na dužim putovanjima dodjeljivana je i veterinarska pratnja pa gubitaka za vrijeme prijevoza gotovo i nije bilo.

Ključne riječi: životinje, vodeni putovi, prijevoz, veterinari