

Ancient Overland Trade Routes to the Mediterranean Basin

By

Nick Nutter

www.nuttersworld.com

2024

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Introduction

Ancient Trade Routes to and in the Mediterranean Basin

The Mare Nostrum, or Mediterranean Sea, was the centre of the world until Europeans arrived in the Americas in the late 15th century AD. From the earliest incursions into the Mediterranean area, humans have created exchange and later trade routes in order to survive. These spider's webs of interconnectivity linked people at one end of the Mediterranean with those at the other and, over time, crawled out to reach people in East Asia, northern Europe and deep into the African continent. The first routes were obviously on land and ranged from single tracks between settlements to the formalised series of routes such as the Silk Road. The maritime routes similarly began as courses between safe havens one day's paddle apart and developed into formalised routes transversing the Mediterranean from north to south and east to west.

Ancient Overland Trade Routes to the Mediterranean Basin

To understand the movement of commodities around the Mediterranean, we need to take a brief look at the overland routes that had already been established by the first millennium BC.

The origin of the land-based routes is lost in the mists of time. Mesolithic communities wore tracks across the landscape linking their communities together, as did the later Neolithic people. Those tracks often developed into more substantial drover's routes as the Neolithic herders moved cattle, pigs, sheep, and goats across the land, from winter pastures to summer pastures, to recognised centres where they could trade breeding stock and surplus animals for meat for pottery, beer and more exotic goods that came from afar. In effect, the first markets.

As communications across the Mediterranean improved and societies started to develop, amber, spices, slaves, precious metals, and ever more exotic goods became more in demand and ancient entrepreneurs forged links with the Indian continent, central and West Africa, Asia, and northern Europe. This was the beginning of the overland routes that became named and famous.

Crossing the Deserts



The desert routes would not have been practicable without that first 'ship of the desert', the donkey. Donkeys evolved in northeast Asia from the wild ass in the early part of the fourth millennium BC. The impetus coming from pastoralists needing a beast of burden to carry products over an ever-drier landscape. In 3000 BC, or thereabouts, ten donkeys were buried beside a royal enclosure at Abydos. Five hundred years later, a donkey was worth four times that of a normal slave. Donkeys are able to carry 50 - 90 kilogrammes over a distance of 30 - 50 kilometres per day. They can exist on the roughest vegetation and can go without water for several days. The donkey marked the first improvement over human portage. Although not happy crossing expanses of true desert, the donkey is nimble footed and at home in the semi-arid environments of the Mediterranean. Not surprising then that they were soon a common sight all over the Middle East.

Until the domestication of the ultra-hardy one humped camel, also known as the dromedary, in the early first millennium BC, the donkey was the preferred beast of burden.

None of the overland roads, apart from the Amber Road, would have been fully developed without the donkey and the camel.

Although known as Roads, the word Route is probably more accurate since all the roads had multiple tracks leading in the same general direction but taking in different population centres.

The Amber Road



The Amber Road was an ancient trade route for the transfer of amber from coastal areas of the North Sea and the Baltic Sea to the Mediterranean Sea. Prehistoric trade routes between Northern and Southern Europe were defined by the amber trade. It was one of the longest trade routes in the ancient world, stretching over 4,000 kilometres.

The Amber Road was first used in the Neolithic period, around 3000 BC. Evidence of amber trade from the Baltic Sea to southern Europe has been found in archaeological sites throughout Europe and the Middle East including the breast ornament of the Egyptian Pharaoh Tutankhamun (roughly 1300 – 1346 BC.)

The Amber Road became increasingly important during the Bronze Age and Iron Age, as amber became a highly prized commodity in the Mediterranean world. Amber was used to make jewellery, ornaments, and other luxury goods. It was also believed to have magical properties.

The Amber Road reached its peak during the Roman Empire. The Romans were particularly fond of amber, and they traded for it extensively with the Germanic tribes of northern Europe. The Romans built a network of roads and fortifications along the Amber Road to protect their trade routes.

As an important commodity, sometimes dubbed "the gold of the north", amber was transported from the North Sea and Baltic Sea coasts overland by way of the Vistula and Dnieper rivers to Italy, Greece, the Black Sea, Syria, and Egypt over a period of thousands of years.

The exact routes of the Amber Road varied over time, but it is thought to have passed through modern-day Poland, Germany, the Czech Republic, Austria, Slovenia, Croatia, Serbia, Hungary, Romania, Bulgaria, and Türkiye. The Amber Road was not a single road, but rather a network of routes that connected different regions. It was used by a variety of peoples, including the Celts, Romans, and Germanic tribes.

It was a major trade route for thousands of years, and it played an important role in the cultural and economic development of Europe. It facilitated the exchange of goods and ideas between different civilizations, and it helped to spread new technologies and cultural practices throughout Europe.

The decline of the Roman Empire in the fifth century AD led to a decline in the use of the Amber Road. However, the trade in amber continued throughout the Middle Ages, and the Amber Road remained an important trade route until the 16th century AD.

Amber was by no means the only commodity to be taken along the Amber Road. Gold, silver, copper, and bronze were all highly prized by the peoples of the Baltic region. These metals were used to make jewellery, weapons, and other tools.

The Romans were particularly fond of the woollen textiles produced in the Balkans. These textiles were known for their high quality and durability.

Roman wine was also a popular item of trade on the Amber Road. The Romans produced a wide variety of wines, from sweet to dry, and these wines were enjoyed by the peoples of the Baltic region.

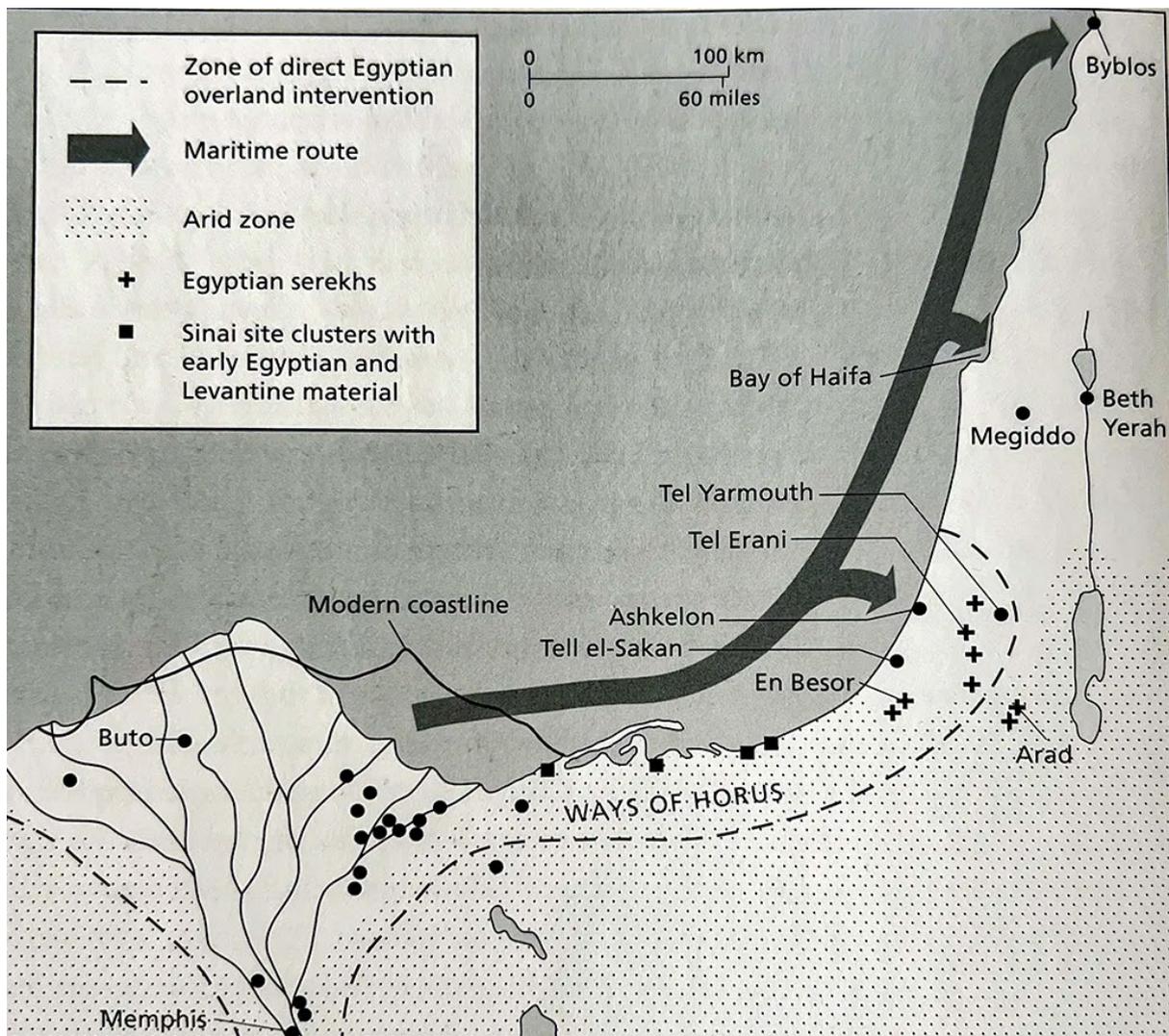
Olive oil was another popular Roman product that was traded for amber. Olive oil was used for cooking, lighting, and body care.

Roman glass was also a popular item of trade on the Amber Road. Roman glass was known for its high quality and clarity, and it was used to make a variety of objects, including jewellery, tableware, and windows.

In addition to these products, the Romans also traded for other goods on the Amber Road, such as furs, honey, and wax.

Pottery, vases, and other ceramic objects were also traded for amber on the Amber Road. Ceramics were used to store and transport food, liquids, and other goods.

The Ways of Horus



The Ways of Horus is an almost mythical route and is certainly the first to be formalised by the elite of Predynastic Egypt.

To the east of the delta of the river Nile is a narrow stretch of Sinai desert through the bottleneck caused by the Mediterranean Sea to the north and the Gulf of Suez to the south. Another stretch of desert crosses Sinai to Gaza. This dry, rocky, coastal passage backed by dunes and more rocks had been the only land route for goods from the Levant, and even further afield, from northern Mesopotamia to Egypt since at least 3500 BC. Along that road passed cedar from Lebanon, resins, aromatics, and copper, all carried by independent traders in long donkey trains.

The early rulers of Predynastic Egypt soon realised that the funnel created by the Mediterranean – Gulf of Suez gap allowed them to regulate goods entering and leaving Egypt. The Sinai passage became formalised as a 340-kilometre, 10-day route, 'The Ways of Horus', which ran from the delta as far as modern-day Tel Aviv about 3100 BC.

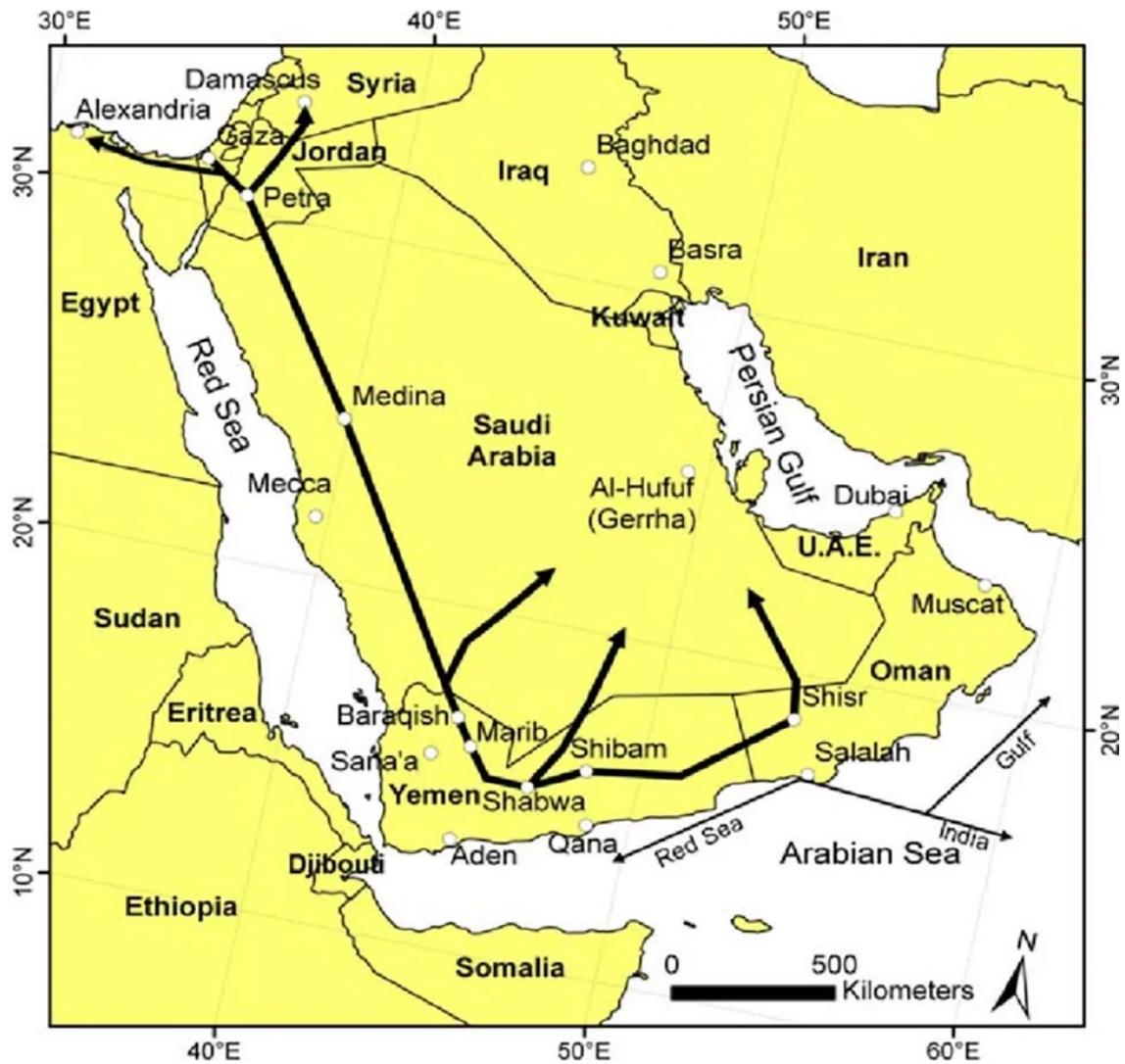
It was just at this time that the donkey was introduced to Egypt, having evolved from the African wild ass during the early fourth millennium. Donkeys are more suited to the relatively short, rocky routes, such as the Ways of Horus, than the camel that much prefers a sandy trail. Donkey

caravans became the preferred mode of transport along the Way and are even depicted on wall plaques in royal tombs. In Akkadian texts, donkeys were worth four times that of a slave.

At the southern Levantine end, the Egyptians built stations from which the caravans could be provisioned. They were also handy places for customs officials to monitor the copper, oils and wines entering Egypt from the Levant. In Sinai itself, state sponsored, quasi-military expeditions mined copper and turquoise to haul it down the Way to Egypt. The Ways of Horus is probably the route taken by the vines and the Eurasian plough that were introduced into Egypt about this time. To cover all the trails through the Sinai passage, at least five stations were built as shown on the map. En Besor for instance was located on the best water spring at the beginning of the Ways. At various locations along the Ways, royal cartouches (Egyptian) called serekhs have been found together with seals on containers of Levantine design, all testifying to the degree of state control imposed on exports and imports.

Sadly, the donkey could not compete with the bulk carrying capabilities of the sailing ship that appeared in the eastern Mediterranean shortly after 3200 BC. After about 2700 BC, coinciding with the start of the Old Kingdom period in Egypt, trade along the Ways of Horus diminished. A new maritime route from the Nile delta to Ashkelon, Haifa and Byblos now brought bulk cargoes of Lebanese cedar, metals from Anatolia, rare stones, and lapis lazuli to feed an ever more avaricious elite who were establishing control in Egypt. One shipment (using a number of ships) of cedar alone consisted of twelve tonnes of the wood that, during the 26th century, built the royal barge of Cheops. The journey by sea corresponding to the same journey along the Ways of Horus, could be accomplished in just two or three days.

The Incense Road



The Incense Road was a network of trade routes that connected the Arabian Peninsula with the Mediterranean Sea. It was used to trade incense, perfumes, and other spices. The Incense Road was one of the most important trade routes in the ancient world, and it played a key role in the economic and cultural development of many of the ancient civilizations.

The Incense Road began to develop around 3,000 BC, when the ancient Egyptians began trading for incense from the Arabian Peninsula. The Incense Road flourished during the Roman Empire, as the Romans created a huge market for incense. The Romans used incense in religious ceremonies, funerals, and other public events.

The Incense Road declined in the fifth century AD, with the fall of the Roman Empire. However, the trade in incense continued throughout the Middle Ages, and the Incense Road remained an important trade route until the 16th century AD.

The Salt Road



The Salt Road was a network of trade routes that connected the Sahara Desert with the Mediterranean Sea. It was used to trade salt, gold, and other goods. The Salt Road was an important trade route in the ancient and medieval worlds.

The Salt Road began to develop around 3000 BC, when the ancient Egyptians began trading for salt from the Sahara Desert. Salt was a highly prized commodity in the ancient world. It was used to preserve and flavour food, and make medicines.

The Salt Road flourished during the Roman Empire. The Romans used salt in their food, in their baths, even to pay their legions, hence the word salary, and in religious ceremonies. They also built a network of roads and forts along the Salt Road to protect their trade routes.

The Salt Road passed through a few important cities, including:

Sijilmasa (Morocco)

Taghaza (Mali)

Timbuktu (Mali)

Oualata (Mauritania)

Awdaghost (Mauritania)

These cities were trading centres for a wide variety of goods, including salt, gold, slaves, textiles, and spices. The Salt Road also played a significant role in the exchange of ideas and cultures between the Sahara Desert and the Mediterranean region.

The Salt Road continued to be important throughout the Middle Ages. The Arabs played a leading role in the Salt Road during this period. They controlled trade routes between the Sahara Desert and the Mediterranean Sea, and they traded salt with the peoples of North Africa and Europe.

The Salt Road declined in the 16th century AD, with the discovery, by the Europeans, of new trade routes to Africa. However, the trade in salt continued throughout the modern period, and the Salt Road remained an important trade route until the early 20th century.

The Spice Road



The Spice Road was a network of trade routes that connected Europe, Asia, and Africa. It eventually became one of the longest trade routes in the world, stretching over 6,000 kilometres. It was used to trade a wide variety of goods, including spices, silk, textiles, and porcelain. The Spice Road was one of the most important trade routes in the world for centuries.

The Spice Road began to develop around 2,000 BC and really took off when the Phoenicians began trading spices from the Arabian Peninsula with other Mediterranean civilizations about the eighth century BC.

The Spice Road flourished during the Roman Empire, as the Romans loved spice in their food. The Romans traded for spices with India, China, and Southeast Asia. They also established trading colonies along the Spice Road, such as Alexandria in Egypt and Antioch in Türkiye.

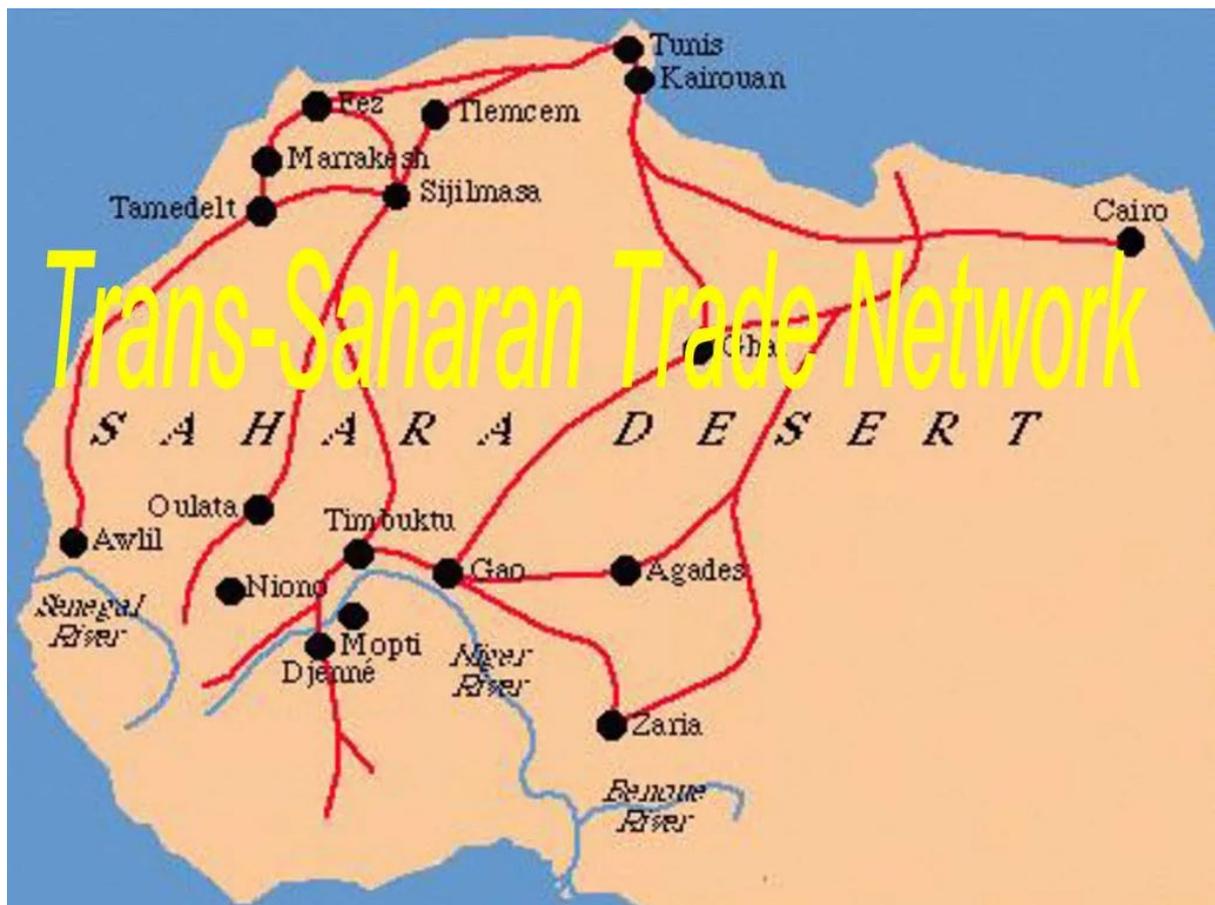
The Spice Road continued to be important throughout the Middle Ages. The Arabs played a leading role in the Spice Road during this period. They controlled trade routes between the Mediterranean and the Red Sea, and they traded spices with India, China, and Southeast Asia.

The European Age of Exploration in the 16th century led to a decline in the importance of the Spice Road. The Europeans discovered new trade routes to Asia and Africa, and they began to trade directly with these regions.

Despite the decline of its importance, the Spice Road continued to be used until the 19th century. It was finally abandoned when the Suez Canal was opened in 1869. The Suez Canal provided a faster and more efficient way to transport goods between Europe and Asia.

The Spice Road had a major impact on the world. It facilitated the exchange of goods and ideas between different civilizations, and it helped to spread new technologies and cultural practices throughout the world. The Spice Road also played a key role in the development of the global economy.

The Trans-Saharan Trade Route



The Trans-Saharan Trade Route was a network of trade routes that connected North Africa with West Africa. It was used to trade gold, slaves, and other goods. It developed in parallel with the Salt Route and many of the tracks between oasis followed by the caravans were identical.

The Trans-Saharan Trade Route began to develop around 3000 BC, when the ancient Egyptians began trading for gold from West Africa. Gold was a highly prized commodity in the ancient world. It was used to make jewellery, coins, and other luxury goods.

This route flourished during the Islamic era, as the Muslims also prized gold and other goods from West Africa. The Muslims also built a network of roads and caravanserais along the Trans-Saharan Trade Route to protect their trade routes. The Trans-Saharan Trade Route declined in the 16th century AD, when the Europeans discovered new trade routes to Africa. However, the trade in gold and other goods continued throughout the modern period, and the Trans-Saharan Trade Route remained an important trade route until the early 20th century.

The Silk Road



The Silk Road was a late comer to the vast trading network that by now spanned the entire known world. Many of the individual routes were the same as used by the Spice Routes.

The Silk Road was a network of trade routes that connected the East and West for over 1,500 years. The Silk Road derives its name from the highly lucrative trade of silk textiles that were produced almost exclusively in China.

The network began with the Han dynasty's expansion into Central Asia around 114 BC and stretched to the Mediterranean Sea, passing through Central Asia, the Middle East, southern Europe, and East Africa. Silk became a highly prized commodity in the west, and it was used to make clothing, tapestries, and other luxury goods.

The Silk Road was not a single road, but rather a network of routes that changed over time.

The Silk Road was used to trade a wide variety of goods, including silk, spices, textiles, porcelain, and precious metals. Like the Spice Road, it also played a significant role in the exchange of ideas and cultures between the East and West, particularly from China from which the West learned how to make paper, print, manufacture silk, make gunpowder and use the compass.

The Silk Road flourished during the Tang dynasty (618-907 AD), when China was a major economic and cultural power.

The Silk Road declined in the 15th century AD, due to several factors, including the rise of the Ottoman Empire and the discovery by the Europeans of new trade routes to Asia.

Despite its decline, the Silk Road had a major impact on the world. It facilitated the exchange of goods and ideas between the Far East and Europe, and it helped to spread recent technologies and cultural practices throughout the world. The Silk Road also played a major role in the development of the global economy.

The Ancient Tin Roads

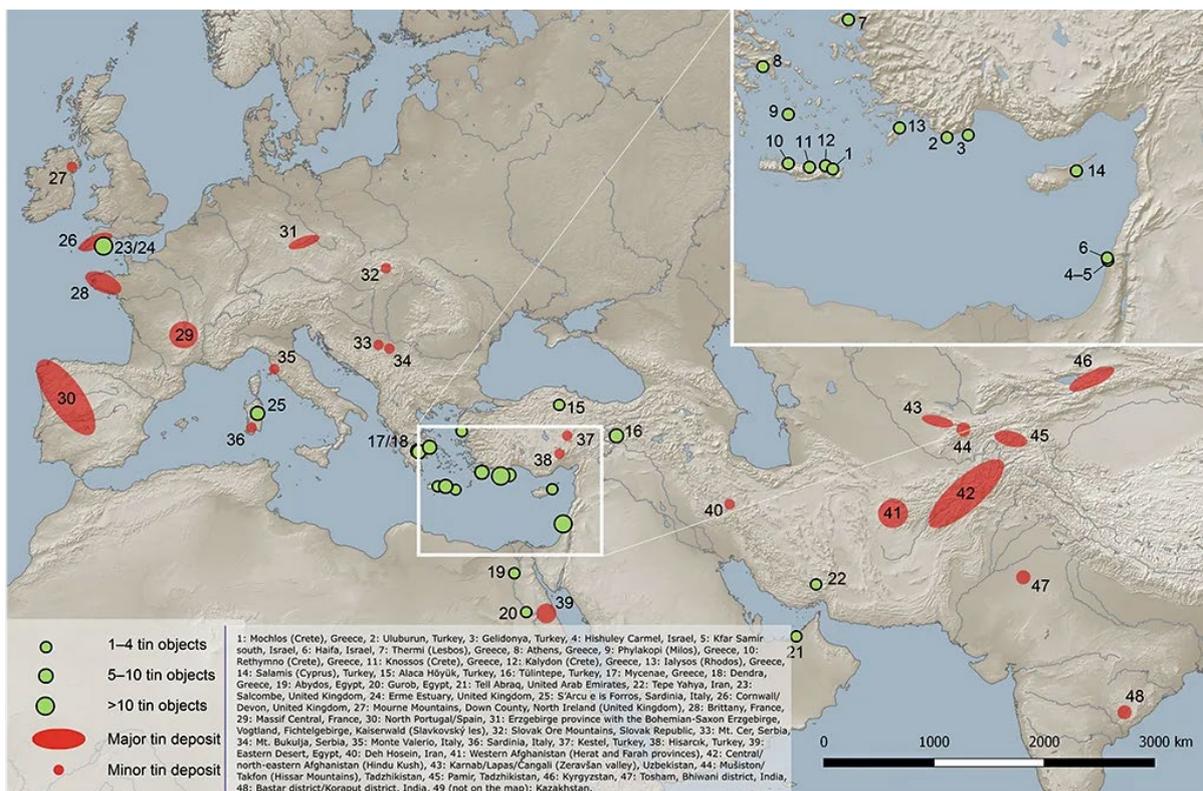
Whilst exotic metals such as gold and silver had long traversed the trade routes, copper and tin were the first metals that could, in combination, be put to practical use to make weapons and tools as opposed to ornamentation. Copper and tin became the first utilitarian metals to be moved along the trade networks.

Why was the Tin Route important?

Tin is used with copper to make tin-bronzes. Early bronzes were produced almost by accident by smelting copper ores that contained arsenic, so called arsenic-bronzes. Occasionally a small amount of tin will be found associated with copper in ores such as stannite. Early in the bronze age, the health hazards of using ores containing arsenic were realised and the search for tin ore, cassiterite, began.

The demand for tin within the bronze age civilisations in the Middle East soon outstripped that supplied from the known deposits in Anatolia making the roads to other sources of supply of strategic importance.

Sources of Cassiterite (Tin) in Western Europe



Cassiterite is not common. In western Europe it occurs in large quantities in Cornwall and Devon in Britain, Brittany in France, Galicia in Spain, and northern Portugal. Smaller deposits of cassiterite were also found in Monte Valerio in Tuscany, Sardinia, the Massif Central in France, Serbia, and Türkiye.

The tin mine at Kestel, in Southern Türkiye, is the site of an ancient cassiterite mine that was used from 3250 to 1800 BC. It contains miles of tunnels, some only large enough for a child.

Tin is also found in Uzbekistan, Tajikistan, and Afghanistan, mining sites that show signs of having been exploited starting around 2000 BC.

First Uses of Tin Bronze in ancient times

The first use of tin-bronze is recorded in Serbia where several bronze objects have been found dated between 4650 BC to 4000 BC. Those bronzes probably used locally sourced deposits of cassiterite.

By 3200 BC, tin was being exported to Cyprus where it was alloyed with native copper and the resulting bronze was exported to various countries in the eastern Mediterranean. This tin probably came from Türkiye.

In the Iberian Peninsula, the first recorded use of tin bronze is between 2300 and 1300 BC at Bauma del Serrat del Pont in Girona region of northeastern Spain. The tin probably came from Brittany.

The Tin Trade



Tin ingots from the Hishuley Carmel wreck. Note the manufacturers stamps.

By 2000 BC, the extraction of tin in Britain, France, Spain, and Portugal was well underway and tin was traded to the Mediterranean sporadically from all these sources.

Evidence of a direct tin trade between Europe and the Eastern Mediterranean has been demonstrated through the analysis of tin ingots dated to the 13th-12th centuries BC from sites

in Israel, Türkiye, and modern-day Greece; tin ingots from Israel, for example, have been found to share chemical composition with tin from Cornwall and Devon.

A shipwreck occurred at Hishuley Carmel, Israel, in the 13th-12th century BC. On board were tin ingots from Cornwall and Devon. This was confirmed by a study published in the journal *Nature Communications* in 2022, which used a combined approach of tin and lead isotopes together with trace elements to narrow down the potential sources of the tin.

The study found that the tin ingots from Hishuley Carmel were most likely sourced from the tin mines of Cornwall and Devon. This is significant because it provides direct evidence for maritime trade between the British Isles and the Levant during the Late Bronze Age.

Both tin and copper were being transported by sea in the eastern Mediterranean as evidenced by the Uluburun wreck off the coast of Türkiye, dated to about 1300 BC. The wreck was carrying three hundred copper ingots weighing ten tons and forty tin ingots weighing one ton.

The question is, 'What routes were used to transport the tin from the major cassiterite deposits to the Mediterranean Basin?'

The Tin Routes



The first tin routes occurred long before the maritime trading powers from the eastern Mediterranean reached western Europe with sail driven boats. It is likely that, apart from short sea crossings by local sewn planked or stretched hide boats powered by oars or paddles, the greater part of the journey would have been overland.

At this stage it is worth noting that the headwaters of the rivers Saone, Loire, Seine, Moselle, Rhine, and Danube converge within a radius of two hundred kilometres from a broad arc of land north of the Alps that extends from Burgundy to Bohemia. It is in effect a communications hub that connects Europe, north to south and west to east, and has been since the early Neolithic period. The area was a nexus for multiple trade routes. A traveller from Marseilles would pass this way to reach the North Sea or, deviating via the Danube and Moravia, the Baltic. The Loire to the Mediterranean via the Rhone was a well-trod path. Another itinerant may pass through on his way from the Atlantic to the Black Sea. Yet another from the eastern Mediterranean could access this hub via the Adriatic, the Po valley, and the Alpine passes.

Tin from Brittany or Cornwall had diverse ways of reaching the Mediterranean. The only part of Europe divorced from this network is the Iberian Peninsula, cut off from the rest of Europe by the Pyrenees. Iberia has often gone its own way.

Brittany to the Mediterranean

It is likely that from early on, before 2300 BC, tin from Brittany was taken down the ancient trade routes that followed the river Loire valley to its headwaters and then across into the Rhone valley to emerge in the Gulf of Lion. An alternative route, equally as ancient, is up the river

Gironde, across to the River Aude at the Carcassonne Gap and thence into the Gulf of Lion in the vicinity of Narbonne.

The early tin bronze at Gerona in the northeast of the Iberian Peninsula probably used tin that had traversed the latter route. The tin was then taken a hundred or so kilometres south, down the coast.

Until about 600 BC, the tin arriving on the Mediterranean coast in the Gulf of Lion must have been taken in small offshore craft and filtered through to Italy and Sardinia where it would have entered the Minoan and Mycenaean trade networks. After the sixth century BC, the tin arriving in the Gulf of Lion would have gone straight into the Greek emporium of Massalia and then onto Greek or Phoenician boats bound for the east.

The Middle East to the Mediterranean

Until 2022, historians doubted that the tin from ancient mines in Uzbekistan, Tajikistan, and Afghanistan made its way to the Mediterranean. However, analysis of the tin ingots from the Uluburun showed that about one third of the tin cargo originated in Uzbekistan whilst the other two thirds was from Türkiye. It transpires that small-scale communities or free labourer, who lay outside the purview of kings, emperors, or any other political force had managed to forge access to a vast international trade network via the Spice Road. At the time, the passes between Iran and Mesopotamia did not have any central authority, major industrial centre, or empire to tax or otherwise hinder trade. The tin made the arduous 3,200-kilometre journey through valleys and mountains in a desert landscape to Haifa where the Uluburun cargo was probably loaded.

This trade in tin was coordinated by Assyrian merchants, based at Kültepe-Kanesh in central Anatolia.

Kültepe-Kanesh Karum

The archaeological site of Kültepe-Kanesh in Anatolia (present-day Türkiye) offers a unique perspective on long-distance trade networks during the Bronze Age (1920-1850 BC). This significance stems from the presence of a large Assyrian merchant enclave, known as a "karum." These resident Assyrian families, originating from Assur some 775 kilometres away, meticulously documented their commercial activities on clay tablets. This extensive archive, exceeding 23,500 tablets, provides unparalleled insights into the organization and scale of trade routes, particularly concerning the previously obscure tin trade.

Kültepe-Kanesh functioned as a pivotal commercial hub, facilitating exchange between Anatolia, Syria, and Mesopotamia. The Assyrian merchants of the karum orchestrated a complex logistics network, utilizing large donkey caravans for transporting goods. These caravans, documented as comprising 200-250 donkeys, each capable of carrying sixty kilograms of cargo, traversed between 30 and 50 kilometres per day, for 35-40 days. The tablets reveal the trade in precious metals like gold and silver from Anatolia, textiles from Mesopotamia, and the commodity we are interested in here, tin.

The record of tin shipments in the Kültepe-Kanesh archives sheds new light on the extent of Early Bronze Age trade networks. Given the likely origin of this tin from present-day Uzbekistan, it becomes evident that Anatolian tin resources were insufficient to meet the growing demand for this essential metal as early as 1920 BC. This finding underscores the interconnectedness of early societies and the vast distances traversed to secure vital resources.

Cornwall to the Mediterranean

At some time before 1300 BC, the amounts of tin leaving Brittany were no longer sufficient to fulfil the needs of the emerging powers in the Middle East. Tin from Cornwall and Devon started to appear in the Mediterranean basin.

Sometime around 320 BC, a Greek merchant from Massalia called Pytheas, made an exploratory journey to Britain. He recorded his fascinating journey in a book called *On the Ocean* (*Peri tou Okeanou*). He saw British inhabitants at a place called 'Belerion,' mining tin bound for Gaul. Many later historians such as Pliny and Timaeus quoted Pytheas in their own narratives. Pliny, quoting Timaeus, writes: "there is an island called Mictis lying six days sail inwards from Britannia where tin is to be found. The Britons cross to the island in wicker boats sewn over with hides".

Diodorus Siculus (writing between 60 and 30 BC) tells us of a promontory called Ictis, identified as either St. Michael's Mount, in Mount's Bay, off the south coast of Cornwall, or Mount Batton in Plymouth Sound, where the local inhabitants traded tin ingots with foreign merchants. A peninsula such as either of the above was often chosen as neutral trading ground by ancient marine traders and there is no reason to think that either or both had not been used as such for millennia.

Three wreck sites off the south coast of England may give a clue as to the route taken by the tin after it was loaded into hide boats at St. Michael's Mount or Mount Batton.

The first site, in Salcombe Bay, has two Bronze Age wrecks, both dated to 800 – 700 BC and called Salcombe A and Salcombe B.

Salcombe A cargo included Bronze Age swords and rapiers dating to between 1300 and 1150 BC, rapier blade fragments and palstaves (bronze axes) dated to the same period and a carp's tongue sword dated to between 800 and 700 BC.

Salcombe B carried a massive load of copper and tin ingots. The copper was analysed and came from a metalworking site in Switzerland. The cargo also included an object made in Sicily, called *Strumento con Immanicatura a Cannone* (having a cannon-shaped handle), which, as yet, has no known purpose.

The second wreck site is at the foot of Langdon cliff just east of Dover and consists of a collection of artefacts, including tools, weapons, and ornaments made in France. These items have been dated to 1100 B.C. Over 350 artefacts have been recovered to date. Again, the bronze originated in northern France but on this wreck some of the pieces had been cut up to facilitate packing.

The conclusion is that the bronze on all three vessels was scrap metal being brought back to Britain to be reworked. In other words, both wrecks are positioned on the return route taken by traders crossing the English Channel.

The third wreck site is in Bigbury Bay in south Devon, five kilometres northwest of Salcombe. Its cargo was tin ingots in the shape of knuckle bones and probably represented tin being taken from Cornwall to the continent. This vessel was apparently on the outward journey although when it foundered is not known, it could be during the Bronze Age or later.

Once cargoes arrived on the continent there are several well-trodden paths that end on the shores of the Mediterranean. The problem is reaching the continent in a time before ships

carried sails. I still have problems reconciling the use of small non sailing boats, probably made of stretched hide or sewn planks, crossing the Western Approaches directly from Cornwall to the north coast of Brittany heavily laden with metal ingots. That there was communication between Brittany and the south of England since the fourth millennium BC is indisputable but cargoes, if any, would have been light. With a heavy load, it seems to me more reasonable to coast hop east, as far as Dover, from where the coast of France is easily visible. A similar coast hopping journey northeast from Calais takes you to the mouth of the river Rhine. Until sailing technology arrived in southern Britain, which may have been as late as 600 BC, this author's view is that such coast hopping is the most likely means by which Britain imported and exported bulk goods from and to the continent.

An interesting discovery of five canoes in a lake village called La Marmotta, near Rome in 1989 AD may help explain how bulk cargoes were carried, or rather towed.

The five canoes are the oldest boats ever found in the Mediterranean, and among the ten oldest known in Europe. Radiocarbon dating placed their origins between 5700 and 5100 BC. One of the most exciting finds has been wooden T-shaped objects, drilled with two to four holes, which explain how the canoes were outfitted to carry large loads. The structure suggests the boats were towed using rope, allowing for the movement of goods, people, and animals.

From the Rhine delta, the river Rhine – river Danube route to the Black Sea was a known ancient trail.

From the Black Sea, local craft would have taken the tin to Türkiye.

The bronze age connections between Britain, Europe and the Middle East are reinforced by finds at Must Farm, near Peterborough in Cambridgeshire. Must Farm was the location of a fenland bronze age village that was built between 1000 and 800 BC. Only occupied for about six months, the village burnt down preserving some remarkable artefacts including glass beads from Egypt and Iran, a bead made from tin itself and a bead made from Baltic amber. At the time, present day Iran was part of the Assyrian Empire. Clearly the 'tin road' was used for far more than just the metal.

The discovery of the Nebra Sky Disc in 1999 AD and x-ray fluorescence analysis of the gold and bronze of which it is made, revealed another link in the Tin Road story. The disc was found buried on the Mittelberg hill near Nebra in Germany. Nebra is in the German state of Saxony-Anhalt, almost in the centre of the country. It is dated by archaeologists to between 1800 and 1600 BC and attributed to the Early Bronze Age Unetice culture. Some of the gold from the disc originated in the Carnon valley in Cornwall and some of the tin in the bronze also came from Cornwall.

The discovery has three notable implications for the account of how the tin roads developed. The location of Nebra emphasises the overland route taken by metals from Cornwall. The date of the Nebra disc pushes the date at which metallic ores were traversing the intercontinental tin route by at least three hundred years. The discovery of Cornish gold indicates that tin was not the only metal making this journey.

Galician Tin Route

Galician tin has been mined and used, together with copper, to make bronze since before 1250 BC. Much of the bronze manufacturing took place locally, mainly in the Mondego, Vouga and southern Douro rivers with isolated smelting sites scattered through northern Portugal and into

Spain. One site, Punta Muros in northwest Spain has been interpreted as a fortified bronze factory.

At another site, Castro de Nossa Senhora, Baiões in central Portugal, moulds together with manufactured pieces: socketed spearheads, bifacial double looped palstaves, unifacial single looped palstaves, daggers, rings, tranchet, and chisels were found. Other nearby sites in the basins of the rivers Mondego, Vouga and southern Douro rivers have been excavated and have since been labelled the Baiões/Santa Luzia cultural group. Most artefacts found in this group are related to the 'Atlantic Bronze Age' traditions, but many artefacts are also clearly related to Mediterranean models for instance: bowls with omphalos bottom; articulated roasting spit fragments; old types of fibulae fragments and early iron daggers from 12-10th century BC contexts. Some of these finished products did make their way outside the Iberian Peninsula via ancient inland routes from settlement to settlement and local coast hopping traders. These sites were occupied between 1250 and 550 BC.

A little of the tin found its way south into southern Portugal and southern Spain where it was used by the southwestern Iberian bronze culture and the Argar civilisation until about 700 BC.

It was not until the arrival by sea of eastern traders that tin from Galicia made it out of the peninsula, except as an integral part of finished bronze products. The evidence suggests that, after the Phoenicians established trading posts along the Iberian Mediterranean and Atlantic coasts during the ninth century BC, tin from Galicia and northern Portugal was taken south to the most northerly Phoenician trading post which was established a few kilometres upstream of the Mondego estuary at Castro de Santa Olaia or Santa Eulalia. Castro de Santa Olaia was established about 850 BC. From there it would have travelled to Huelva and Gades and on into the Mediterranean.

Summary

Excluding the use of local tin deposits, the tin route(s) developed after 3200 BC when tin, probably from Türkiye, was making its way by local traders on land and by sea, to Cyprus.

Sometime before 2300 BC, tin from Brittany was making its way to the Gulf of Lion via the Gironde or Loire valleys. From there it infiltrated into the Minoan/Mycenaean maritime trading networks.

Between 1920 and 1850 BC, tin from Uzbekistan was being taken by land down the Spice Road to the Middle East and Türkiye where it would enter the Mycenaean Sea trading network.

Between 1800 and 1600 BC, Cornish tin (and gold) was making its way at least as far as central Germany.

About 1300 BC, tin from Cornwall and Devon started to arrive at the Black Sea, probably via the rivers Rhine and Danube, and thence to Türkiye where it would enter the Mycenaean trading network.

Finally, the Galician tin arrived in the Mediterranean maritime trading network shortly after 850 BC having travelled just a short distance overland from Galicia and northern Portugal to Castro de Santa Olaia. That tin entered the Phoenician and Greek maritime trading networks.

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