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The largest ship trackway in ancient times: the Diolkos of the Isthmus of Corinth, Greece, and early attempts to build a canal

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Introduction

The Peloponnese is connected to the mainland of Greece by the Isthmus of Corinth. Only this narrow land bridge, about 6 km wide, prevents the Peloponnese from being an island. The Gerania Mountains are situated to the north, to the south those of Onea. Both are connected by a ridge 85 m high which acts like a dam. Channels and narrow land bridges are geographical features of political, economic and cultural importance. Across the Isthmus runs a wall, the Hexamilia, a defence line which was rebuilt on various occasions, such as during the war between the Greeks and Persians. Since ancient times, the north–south trade route made use of this Isthmus. Today a railway line and the road from Athens to Patras runs across it, but for east–west traffic it presents a great obstacle. In the past, ships had to sail around the Peloponnese in order to go from the Saronic Gulf to that of Corinth. This meant doubling dangerous capes, in particular Cape Malea in the south of the Peloponnese.

The importance of the Isthmus of Corinth lies in its strategic position. The city of Corinth for many years controlled traffic between the Aegean and Ionian Seas. During the reign of Periander (625–585 BC) the city of Corinth reached its prime. Periander kept a large fleet to control shipping on both seas. For transporting the vessels from one shore to the other there was a ship trackway, the Diolkos. This system of transporting ships was mentioned for the first time by Thucydides in the period of the Peloponnesian War (late 5th century BC) and later by Strabo, Pliny the Younger, Polybius, Aristophanes and Dio Cassius.

The Diolkos

Discovery

It was probably the German archaeologist, Dr Habbo Gerhard Lolling, who first identified part of the Diolkos. He wrote in 1883: 'Close to the Greek mainland the remains of the so-called Diolkos are still visible. On this trackway small vessels were dragged across from one sea to the other in order to avoid sailing around the Peloponnese'. He continued: 'Near a small inn close to the guardhouse at the top of the Isthmus near the road the remains of the wall blocking the land bridge and the Diolkos are visible' (Baedeker, 1883: 220). J. G. Frazer in 1913 reported on another section 'near the village of Kalamaki', and in 1932 Harold North Fowler identified stone slabs at the western entrance of the canal as part of the ancient Diolkos (Fig. 1). In 1946, a stone was discovered which had the letter X engraved on it (Verdelis, 1958: 143).

It took another ten years before further discoveries were made. During a military exercise some carefully set stones were

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Figure 1. The western termination of the Diolkos next to the Corinth canal in September 1981 (sector A). This so-called mooring place has suffered from the wash of passing vessels. Since the photograph was taken, some of the carved stones have slipped into the canal. There are fewer stones in the group on the right. (Photo: Author)

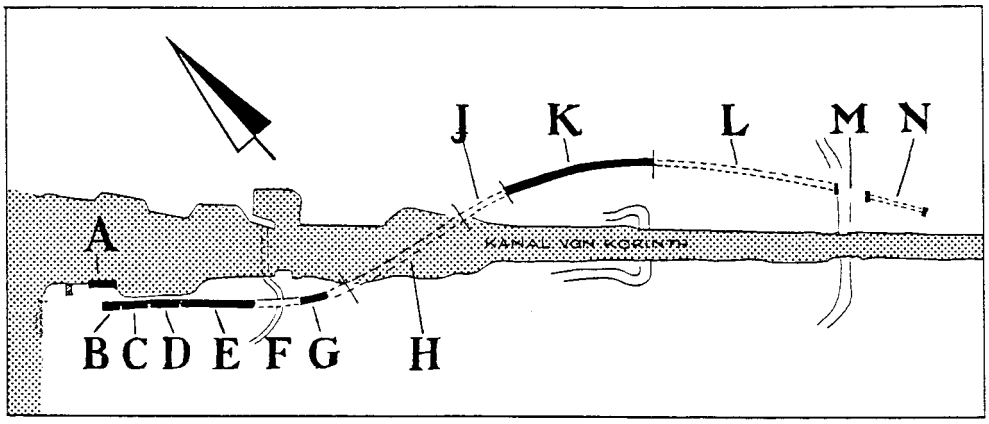

Figure 2. The Diolkos at the western entrance to the Canal near Poseidonia, divided into sectors A to N. (Drawing: Author)

accidentally uncovered by bulldozers. In July 1958, the first 80 m were excavated with the help of a military school, and a further sector (G) was discovered (Fig. 2). On the west side of the southern road to the ferry across the modern Corinth canal the Diolkos was located in a trial trench. These excavations were continued in 1957 and 1958. In sector J, no traces of the pavings were left. Due to further excavation in the east, the known length of the Diolkos was increased to 200 m. At the eastern end of the military area, remains of the Diolkos were discovered (sector M) just as in sector N. Sectors G and C were completely unearthed in 1958, followed by sector B with the already known accompanying walls the next year. Thanks to this archaeological work 1100 m of the Diolkos are now known (Verdelis, 1960a: 136; Verdelis, 1962: pl. A).

Dating

It is not known when the Diolkos was constructed. For Thucydides the Diolkos was something already ancient. The carved

Figure 3. The so-called mooring place in sector A, May 1996. Compare Figure 1. The gap in the flags is clearly visible. The destruction of this important historical monument will continue, unless measures are taken. (Drawing: Author)

characters and monograms which can be seen on the surviving stonework appear to date from the period of Periander. None the less, there may have been an earlier but less well-built slipway. The latest reference to the use of the Diolkos dates to the 12th century AD and it must have fallen into disuse during the Frankish conquest after Roger of Sicily had destroyed the city of Corinth.

Description

Right behind the pilot station at the western entrance of the Corinth canal there is a large area of rectangular stone slabs, sector A (*Plans I* and *III*, Figs 28, 29); its surface slopes towards the canal. It is not known whether this slope already existed in antiquity or whether it is the result of building operations for the canal. It is made up of slabs of various sizes and extends about 10 m N–S by 8 m E–W. Carved stones lying in the present canal indicate that this area was once larger in both directions. Loosely laid stones are visible for a length of 27·5 m. There are slabs even beyond this point and originally this area must have been 50 m long. There are no cart tracks or

Figure 4. Sector B. The southern side of the enclosure wall visible in June 1992. The bottom is covered with drift sand and gravel. (Photo: Author)

Figure 5. Characters in sector C carved into the stone. This, the longest sequence of letters, reads: I C A T=i, γ, α, τ. The meaning remains unknown. (Photo: Author)

Figure 6. Character Ⱥ and a double axe on one stone. The symbol on the left could have been removed or replaced by the Ⱥ. (Photo: Author)

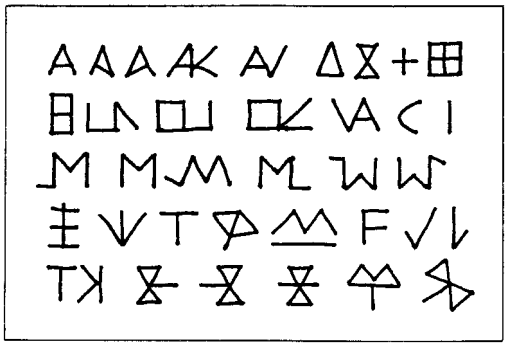

Figure 7. Characters and monograms in order of their appearance from west to east. (Drawing: Author)

other wear marks. The end of the ancient Diolkos shows clear signs of the destructive power of present-day shipping; as a result of wash, some of the flagstones have become loose and there is the danger of their slipping into the canal (Fig. 3).

To the south of this paved area, sector B, the real end of the Diolkos lies separated by a low mound of spoil (*Plan III*, Fig. 29). Its breadth varies between 5·8 and 5·9 m while the length of the interior comes to 24·55 m. This U-shaped building is not in a direct line with the trackway, which starts further to the east. The Diolkos should lie buried under 1 m of sand further to the west. Most probably this building was erected in the course of digging the canal in 1880 by reusing old stones. Its floor today is covered with sand and gravel which were deposited there by waves as it

Figure 8. Sectors C and D of the Diolkos. The trackway continues in the upper left corner, sector E. To the left, a mound of spoil. Most of the characters and monograms can be found on these stones. (Photo: Author)

Figure 9. Remains of the Diolkos to the west of the access road to the ferry in September 1978. (Photo: Author)

Figure 10. Sector G to the east of the access road to the ferry in June 1992. The sector ends on the bank of the canal in the foreground (not shown). (Photo: Author)

is just above sea level (Fig. 4). Sector A must have been used for keeping the vehicles ready and therefore no wheel tracks can be found there.

During the excavation in 1956, characters and monograms were discovered. As they were found at a prominent part of the Diolkos, the director of the excavation, N. M. Verdelis, concluded 'that this spot must have been of particular importance for the whole course and function of the Diolkos' (Verdelis, 1956b: 55). Later, during the excavation of sector C at the southern side of the canal, characters and monograms were unearthed in great numbers. On some stones there are one or more incised signs (Fig. 5). The suggestion that these symbols were a kind of signal is difficult to accept today. Instead they must have been marks for adjusting the vehicles.

Figure 11. The Diolkos in September 1978. The tracks and side tracks are clearly visible. The stones to the right are part of a modern supporting wall. (Photo: Author)

Figure 12. Eastern end of the guide rails in sector K, September 1978. On the left row there are cog-like insertions. On the right row chafing marks are visible. (Photo: Author)

Of particular interest is the combination of the signs 𐄁 and 𐄂 before and after the stone on which a double axe has been engraved twice. The two 𐄁s are situated head to head and one of the double axes is right in the middle. This prominent place must have been the centre point of a technical installation (*Plan II* and *III*, Figs 28, 29). It is these characters which suggest the date of the Diolkos.

Sector C follows to the east of B. It is the stage of symbols and monograms (Figs 5–7). The carved stones usually measure 0·3 × 0·6 × 1·8 m. They are arranged in the following order: in the middle, two rows of slabs are laid lengthwise on the line of road, while those to the left and right are placed in a transverse direction. As a result of erosion in recent years at the southern end, a kind of kerb was unearthed. It is visible for 30 m. The kerbstones are of the same height as the carved stones and do not project above them. Sector D has been destroyed but next to it is a well-preserved sector E, which leads to the access road to the ferry across the modern canal. Part of sector E is constructed in the same way as sector C and a few characters are visible. At this stage tracks can be seen for the first time, but they are not deliberately cut out; instead they derive from the abrasion of the vehicles' wheels (Fig. 8).

East of the access road to the modern ferry the Diolkos continues with a slight bend to the left. Of the 40 m which were preserved, about 8 m have collapsed into the canal during the last few years. Today only 26 or 32 m remain (Fig. 9). In the report on the construction of the canal by chief engineer Béla Gerster, neither the discovery of the Diolkos nor the removal of the carved stones are mentioned, though

Figure 13. Eastern end of the excavated Diolkos with some modern repairs, September 1978. (Photo: Author)

the canal cuts across the Diolkos (Gerster, 1884). The slabs are usually laid transversely to the line of the trackway and only in a few cases are they fitted lengthwise. The latter are always placed in the middle of the trackway. The breadth of the trackway varies between 3·6 and 4·2 m. There are no straight kerbs since the stones are of different lengths. As the surface of the road is level with the surrounding earth there is no need for a straight kerb (Figs 9, 10).

The most interesting parts of the trackway lie inside an area used by a Greek military engineering unit (sectors J–L; Fig. 2). The first part of the Diolkos in this area has disappeared completely. It then runs on with a slight bend to the right with a radius of 500 m. At this stage, the tracks, which were deliberately cut into the slabs, are clearly visible (Fig. 11). Their role was to guide the cart wheels. It is surprising that here the tracks are very well preserved, while at other stages none or only shallow ones are visible. The gauge remains a constant 1·5 m. Since the Diolkos was in use for many years one would have expected deep abrasion marks along the whole length.

An unusual feature is the side tracks accompanying the two parallel main tracks. It is uncommon for these to be cut so deeply into the rock. They are separated from the main track and join them again later (Fig. 11). These side tracks can be

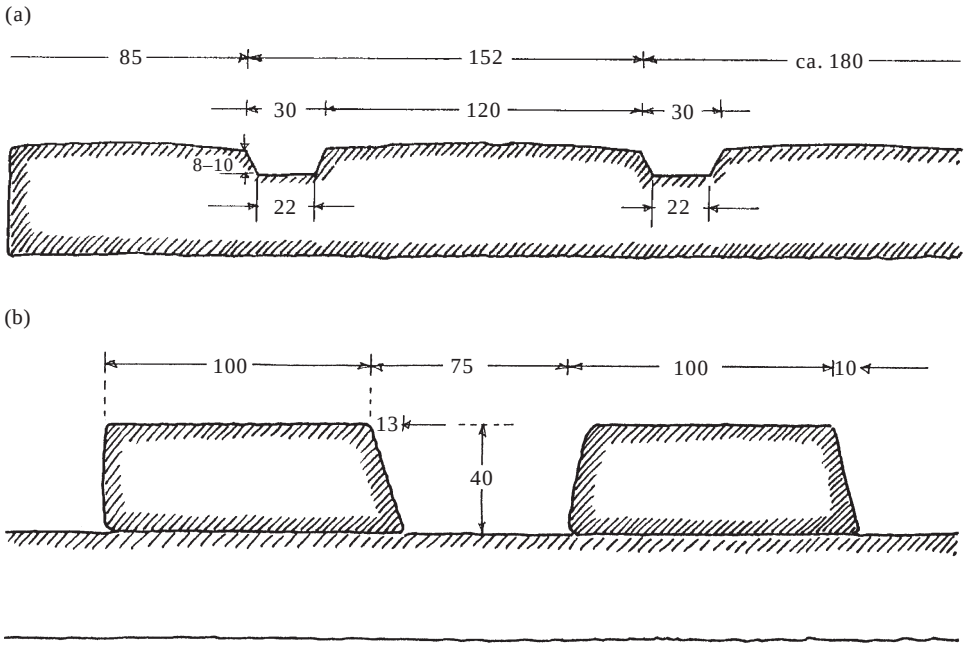

Figure 14. (a) Section through the ship trackway in sector K, immediately in front of the guide rails. The gauge measures 1·52 m. (b) Section through the ship trackway and the guide rails. (Plan: Author)

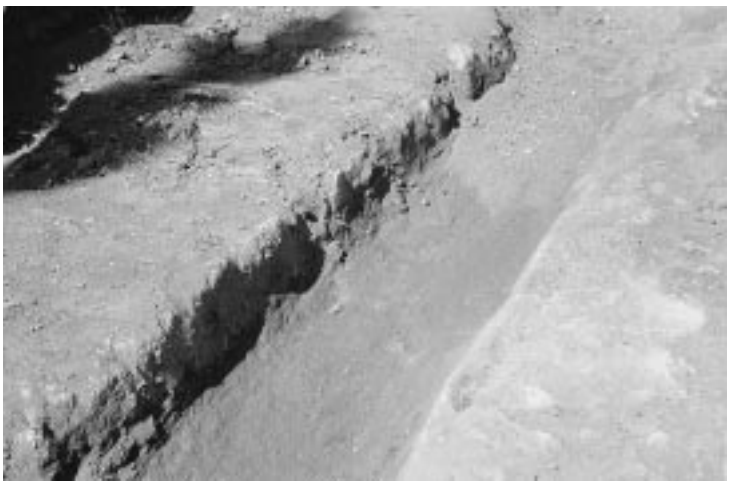

Figure 15. Wheel track immediately in front of the guide rail. The sharp edges are an indication that these tracks were carved. (Photo: Author)

explained if we compare them with the run of a long vehicle, because the fixed axle at the rear takes a shorter route, as in a bend. This also explains the different depth of the tracks. Here experimental archaeology would be of great help to find out how great the distance between the forward and the rear axles must have been. Further to the east, there are two parallel rows of stones on the trackway. It was their

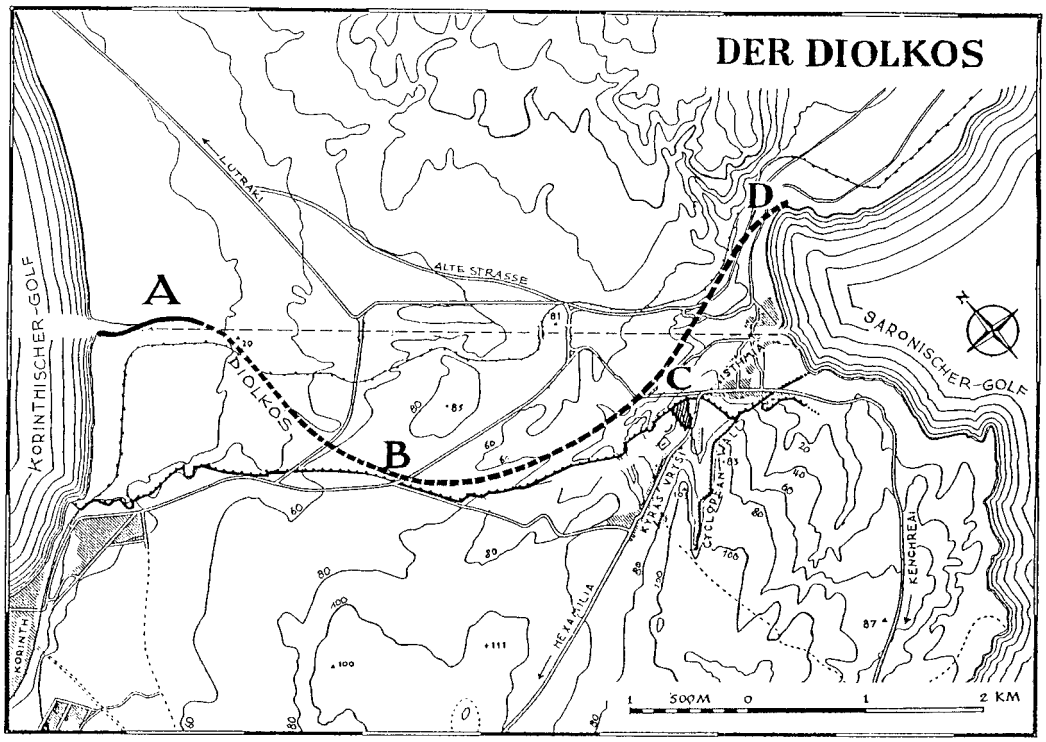

Figure 16. The assumed course of the Diolkos. The findspot near Poseidonia is marked with an A. The known course at Schoenus (present day Kalamaki) is situated at D. The walls of the Justinian defensive system are next to the village Kira Wrisse at C. (Plan: Author)

unearthing by a bulldozer which led to the discovery of the Diolkos inside the military area. Both the stone ramps are next to the northern track. The southern guiding row consists of 22 carved stones which add up to a length of about 15 m, while the northern one is a little shorter. These stones measure 0·4 m in height. They are no longer in their original position as they have been moved diagonally and have also been canted up. Most probably their task was to guide the wheels of the vehicles. Within this guide-stone stage no, or hardly any, cart tracks were visible.

The last stone of the northern row shows a particular detail. It has been carved in a cog-like fashion (Fig. 12) and looks similar to a rack. There is no technical reason for this. Perhaps it was a kind of pawl to prevent the wheels from uncontrolled rotation, which would have been useful when going down the incline. On the southern guiding row, narrow grooves have been ground into the upper side. They should not be regarded as wheel tracks, but as the chafe marks of ropes. Most probably these marks are contemporary with the wheel tracks along the Diolkos, as it is rather unlikely that they relate to an earlier period.

The last stage towards the east has been removed in modern times and terminates in a military car park (Fig. 13). The Diolkos runs beneath it and cannot be excavated. Beyond this spot and outside the military area the ship trackway has been traced during archaeological work. This stage reaches as far as the canal. The final section of the Diolkos again runs along the southern bank of the canal

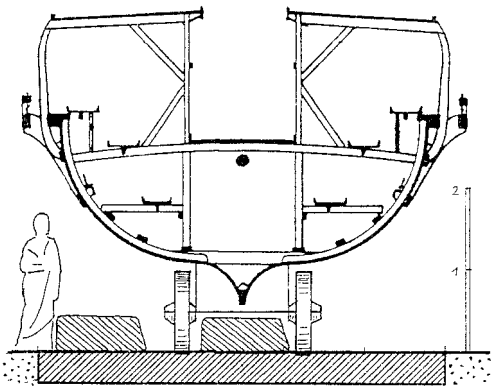

Figure 17. Section through a reconstructed trieres standing on the Diolkos. The narrow gauge indicates the difficulty of this kind of transportation. (Drawing: Author)

through orchards and gardens. Thus a total length of 1100 m of ship trackway is known and at least some parts have been excavated.

Reconstruction

The builders of the Diolkos did not choose a straight line, but one which fitted with the landscape. They preferred a curved course in order to avoid, not only the removal of larger quantities of earth, but also steeper gradients. The Diolkos climbs across the lowest pass of the Isthmus. Had it been a direct line the total length would have measured only 5857 m, but then the trackway would have had to ascend a height of over 79·19 m. The gradient would have been as much as 1:37 while the selected routes reaches only 1:70. This rise is not a constant one, as it is greater in the central section than towards either coast.

That part of the Diolkos which leads towards the Bay of Corinth is still visible and other parts have been excavated. It has always been assumed that the ship trackway runs in a straight line to the east. The geographer Strabo (*c.* 63 BC–AD 23) tells us that the eastern Saronic Gulf end was at the ancient village of Schoenus. This is nowadays the industrial town Kalamaki which in 1853 was only 'a small town with a few houses' (Hettner, 1853: 117). Strabo did not mention the western end of the Diolkos, perhaps because there was no settlement at that place. Travellers and archaeologists of the 19th century mentioned two parts of the Diolkos without localising them. The 'crossing with the road from Corinth to Isthmia' is probably our spot B, while 'near the front of the wall' could refer to spot C (Baedeker, 1908: 318) (Fig. 16). Our knowledge of both places was later lost. By using such information it is possible to reconstruct the run of the Diolkos from the Bay of Corinth across the Isthmus to the Saronic Gulf. The total length of the Diolkos adds up to 8000 m due to its southern run. Since there are already two bends in the excavated part, further bends can be expected along the other parts of the Diolkos which pass over higher ground.

Construction and use

Ancient writers tell us little about how ships were transported across. In the sources only 'dragging across' or 'transporting' are mentioned. In one of his plays Aristophanes gives an offensive–erotic comparison with the Isthmus of Corinth in the line '. . . from here to there faster than someone from Corinth' (*Thesm.* 648). The transportation of heavy goods was nothing unusual in ancient Greece. The erection of temples, theatres and arenas are clear signs of this ability. The forty columns of the temple of Apollo in Corinth (550–525 BC) were monoliths. Each column weighs 26 tonnes, has a height of 7·21 m and a diameter of more than 1·30 m, while the architrave blocks each weigh 10 tonnes. It is known that column drums for the city of Eleusis came from a quarry 35 km distant. The transport system for heavy goods was well developed in that period; in an inscription on the Parthenon in Athens (448–532 BC) wheelwrights, carters and transporters are mentioned. Diodorus

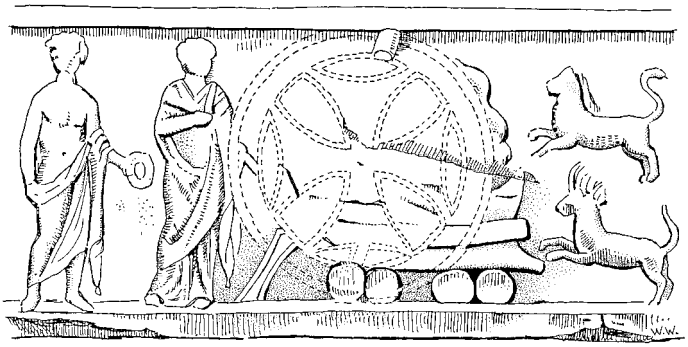

Figure 18. Panathenaic ship carrier on the calendar frieze of Hagia Eleutherios in Athens. It is the only depiction of a ship-wagon with four axles. The Christian cross carved subsequently destroyed parts of the ship-wagon and part of the ship. (Drawing: Author)

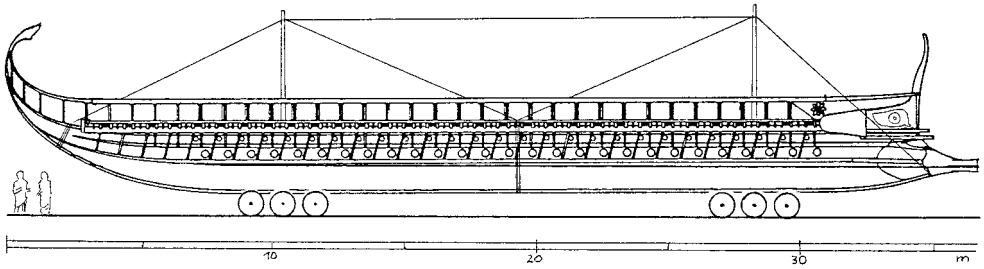

Figure 19. A Greek trieres, as reconstructed by J. S. Morrison & J. F. Coates, shown on trolleys secured by guys to prevent sagging. (Additions: Author)

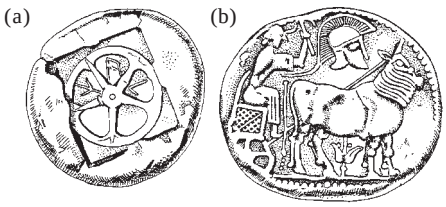

Figure 20. (a) Greek coin depicting a wheel. 6th century BC. (b) Silver coin depicting an ox-cart. Northern Greece, *c*. 500 BC. (Drawing: Author)

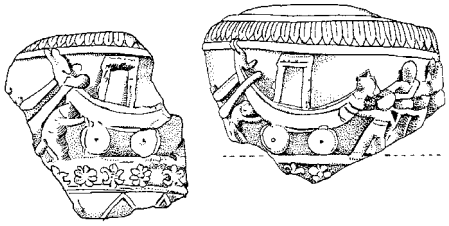

Figure 21. Sherds with pictures of processional ships on wheels pushed and pulled by men and symbolic animals. 1st century BC. Benaki Museum Nos 12775 & 12776. (Drawing: Author)

Siculus (1st century BC) tells us about transport vehicles with several axles, which were specially constructed for the building of a temple. Livy refers to the transportation of ships from the Mare Piccolo to the Mare Grande near Tarento. For this purpose '. . . all kinds of vehicles were collected, joined together, and lifting devices were brought near' (Livy, XXV11, 18). This means that more than one vehicle was used for each ship. The relief of a calendar frieze of Hagia Eleutherios shows how this could have been done: two undercarriages with two axles are placed under a

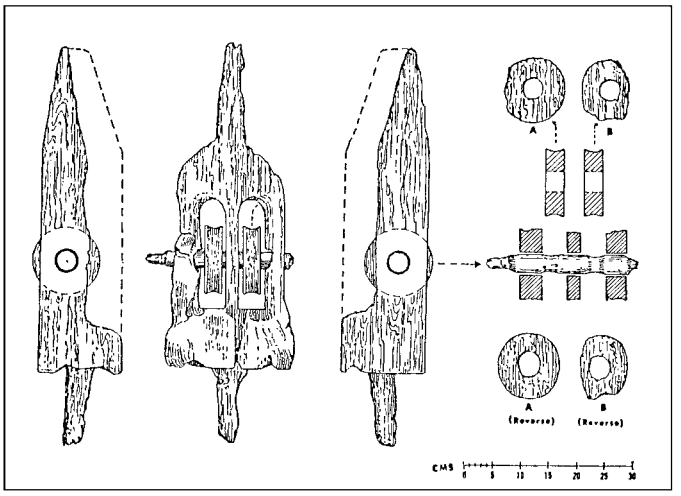

Figure 22. Two-sheave block from the harbour of Kenchreai. The form clearly shows that the block was part of a lifting device and not part of a ship's equipment. Such devices may have been used for lifting ships at the Diolkos. (Drawing: S. W. Katzev)

processional ship (Fig. 18). This helps us to imagine the method of transportation over the Diolkos.

Two theories about how the ships were transported have been put forward:

1. The use of sledges and similar devices with wet sand in the wheel tracks to reduce friction.
2. The use of wheeled vehicles.

Technical arguments support the second solution. Wheel tracks, side tracks and guide rows fit one technical concept: the use of trolleys. Lifting the ships with the help of derricks onto the undercarriages would have been within technical capacities. For example, the architrave blocks of the Parthenon weighing 9 tonnes had to be lifted on top of the columns. One cannot place a ship on two undercarriages (as are tree trunks today), because of the danger of breaking the keel in the middle. Therefore, there must have been a kind of truss. Warships had, as a kind of inner stay, constructions of rope, the hypozomata. These were thick ropes running between the stem and the stern directly beneath the deck. Their task was to reduce the sagging and hogging of the hull. Most probably similar guys were used above the hull during transport (Figs 17, 19).

For moving the vehicles along the Diolkos some kind of propulsion was needed. Verdelis, the archaeologist and excavator of the Diolkos, excluded the use of draught animals as no wear marks of their hooves could be found. Another of his arguments was that the yoke could not have been made broad enough to allow the oxen to walk beside each other on the Diolkos (Verdelis, 1958: 142). However, it should be mentioned that the hearse of Alexander the Great was pulled by 64 draught animals which were harnessed to four beams with 16 animals under each. The use of 'machine propulsion' was also rejected by Verdelis; instead he considered that slaves might have pulled the ships (Figs 20, 21).

A trieres, the Greek oared warship, displaced an estimated 21 tonnes without, and about 27 tonnes with, equipment (Morrison & Coates, 1989: 68; 1990: 231).

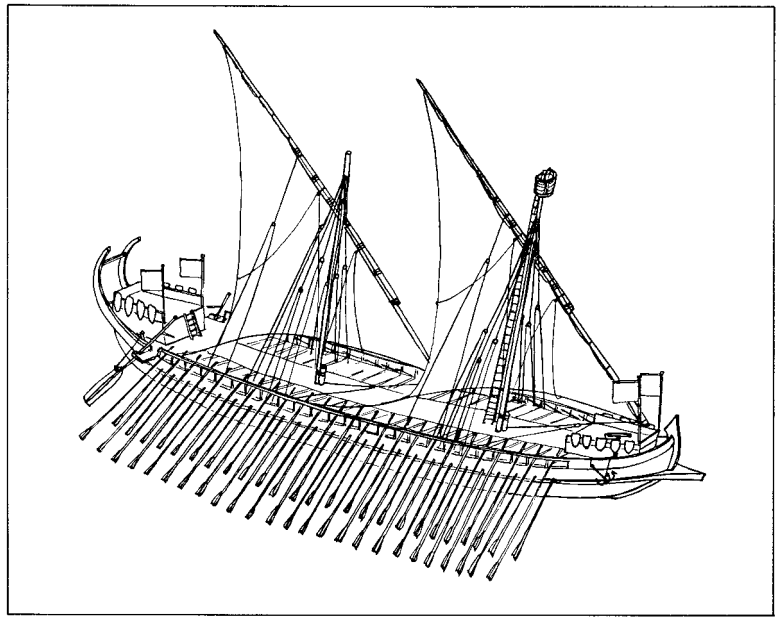

Figure 23. Byzantine warship of the dromon type. 6th century AD. (Drawing: M. Bonino, 1979)

On a permanent installation such as the Diolkos, technical devices can be expected to have ensured that the transport was safe and fast. 'Spanish windlasses' and pulleys were certainly available. The words of Thucydides in the summer of 428 BC '. . . and erected machinery on the Isthmus . . .' (Thuc., III, 15) can only mean that technical gear and ropes were overhauled. The speed of the transport much have been comparatively high, in the words of Cleisthenes above, since the people of Corinth could look back on a long experience. Propulsion must be imagined with men and animals pulling on ropes with the help of tackles and blocks (Fig. 22). Warships, which were always oared vessels, had their own propulsive power with them, in the case of a trireme, 170 oarsmen on each ship; these had to move about 21 tonnes, or say, 125 kg per man. In 220 BC, Demetrios of Pharos had a fleet of about 50 vessels dragged across the Isthmus to the Bay of Corinth by his men. For this they received extra pay (Polyb., IV, 19).

According to written ancient sources, only warships and not merchant vessels were transported. But historiography is always reporting war. There is no reason why merchantmen should not also have been dragged across the Isthmus. When Pliny writes that 'vessels whose size prevented them from being carted across, had to make a long and dangerous detour' (N.H., IV.10) it does not imply that only small ships could make use of the Diolkos. Instead it means that by his time, about AD 50, there were already supervessels and huge warships which were unable to make use of the Diolkos. Thucydides, the great ancient historiographer, mentions that during the Peloponnesian War (431–404 BC) the Diolkos was used for transporting warships across the Isthmus. He refers to this transportation of ships as something fairly obvious, as if this was a long-standing tradition. In the summer of 428 BC, the people of Sparta started preparations for bringing their ships into an assault position against Athens. The

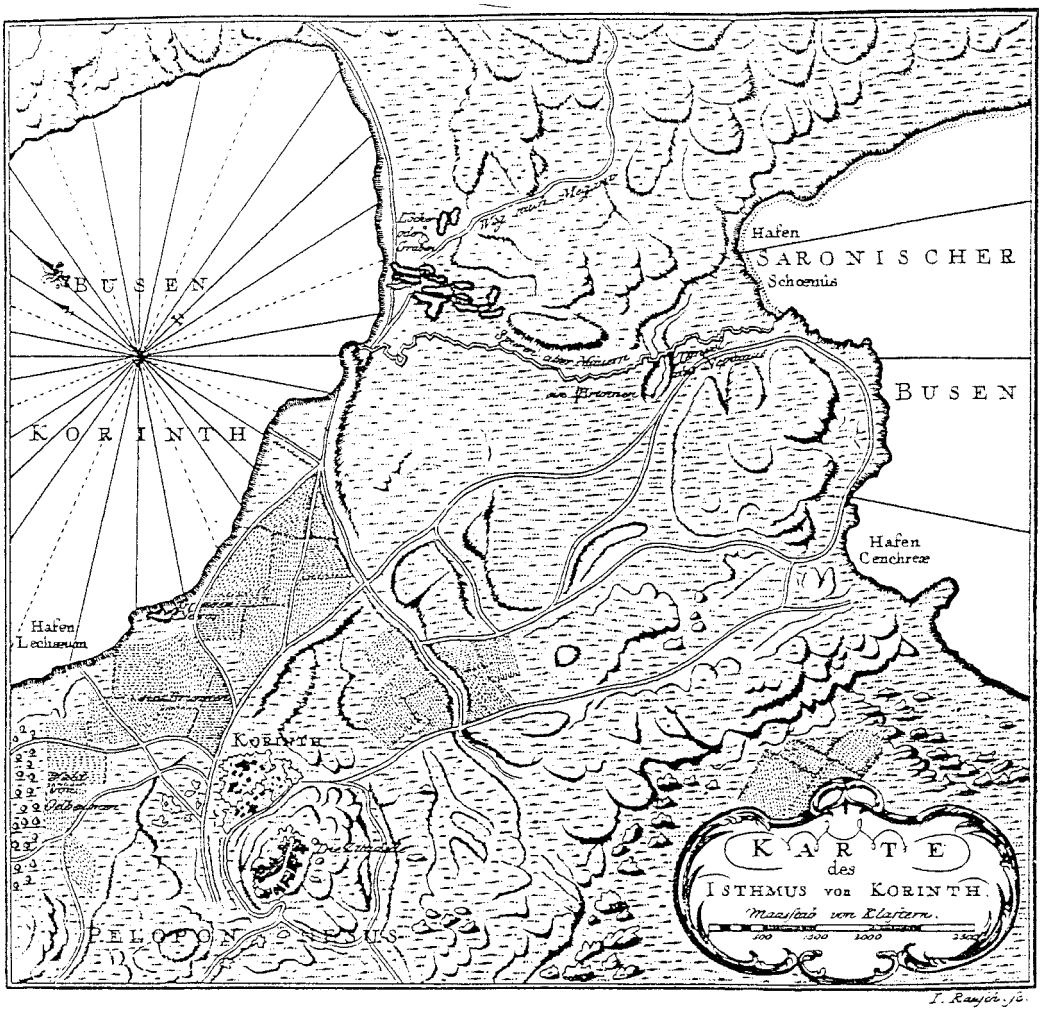

Figure 24. The Isthmus of Corinth on a map of 1776. The *Löcher und Graben* (holes and ditches) of Nero are indicated. To the left *Graben Neros* (Nero's ditch) is incorrectly shown. In reality it is the western harbour of Corinth, Lechaeum. The Isthmus is crossed by the old defensive wall, the Hexamilia. In the Saronic Gulf the eastern harbour of Corinth, Kenchreai, is marked.

Diolkos must have been out of order since the Spartans '. . . prepared a way of rollers across the Isthmus' (Thuc., III, 15). In the summer of 411 BC, there was a similar situation. The Spartans sent three commissioners to Corinth in order to organise fast transport of warships across the Isthmus. Speed was asked for and 21 of the 39 vessels were carted over immediately. They were taken to their operation area at Chios at once while the other 18 ships followed (Thuc., VIII, 7f).

In 217 BC, when the fleet of Philip V arrived at the eastern end of the Isthmus, eight undecked ships and 30 light vessels crossed the Diolkos, while 12 big fighting ships with decks and superstructures had to sail around the Peloponnese. After the battle of Actium in 31 BC, Octavian used the Diolkos to take his fleet as fast as

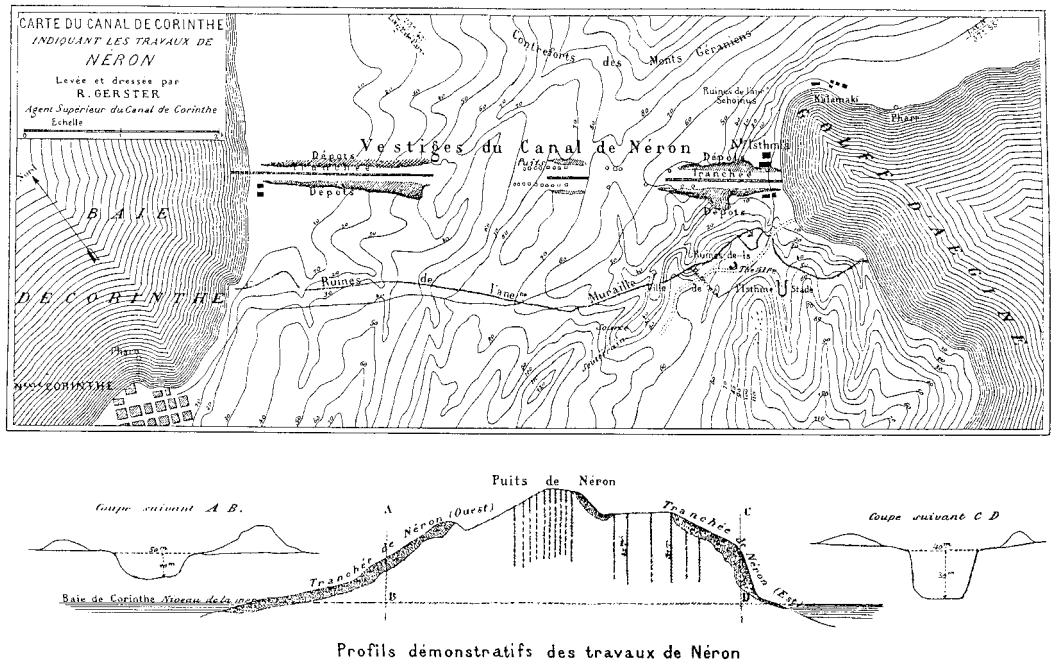

Figure 25. Plan of the Isthmus of Corinth with the remains of Nero's canal. The map was drawn by Bela Gerster in 1881 during his survey for the modern canal.

possible towards Asia: of his 400 vessels, 260 were constructed in the 'liburnian way', smaller, lighter galleys, and it was part of this fleet which crossed by the Diolkos to the Saronic Gulf.

In AD 868, the Byzantine admiral Niketas Oryphas had his whole fleet of 100 dromons dragged across the Isthmus; according to the report the crossing was executed quickly and with great skill (Fig. 23).

Canal

The idea of digging a canal through the Isthmus of Corinth is an old one. The Diolkos, the ship trackway, could not meet all the needs of either naval or merchant ships. A number of attempts were made in antiquity.

Periander of Corinth (*c.* 625–585 BC) planned a canal, but did not continue work on it because he was afraid that Corinth might lose its economic power. In the same way that modern Corinth did not gain any economic advantage from the present canal (unlike the City of Patras), ancient Corinth might have lost its ruling position as an entrepôt for goods.

Demetrios Poliorketes (336–283 BC), after taking the city of Corinth, also planned to dig through the Isthmus in order to improve means of communication. His surveyors believed that the sea level of the Gulf of Corinth was higher than that of the Aegean Sea. They expected heavy floods to result from the construction of a canal, and that the current would make navigating the waterway impossible. Due to these incorrect calculations all activity was discontinued.

Julius Caesar (100–44 BC) considered digging a canal, along with other projects reported by Suetonius: a huge temple for Mars, an immense theatre, the drainage of the Pontine Marshes, a road from the Adriatic Sea to Rome 'and the Isthmus of

Figure 26. The badly weathered votive relief made by Nero's workmen. Height 1·50 m, breadth 0·97 m, depth about 0·2 m. (Photo: Author)

Corinth [shall be] cut through' (Caes. 44). The plan certainly had strategic–military reasons, as did the planned road connection, but it also would have made a shorter safe passage for merchant ships hailing from the East. The assassination of Caesar in 44 BC put an end to all these plans.

Caesar's scheme was revived by Caligula (Emperor AD 37–41), without success and by Nero (Emperor AD 54–68). Presumably while taking part at the Isthmian Festival, Nero remembered the failures of his predecessors to build the canal. The ambitious ruler sent a group of surveyors to the Isthmus. With the help of a *chorabates* (a kind of water level), *groma* (sighting device), *metra* (surveyor's rod), *perpendiculus* (plummet), *norma* (right-angled straight edge) and *decempeda* (rod of ten feet) they mapped the area. To determine the height of the Isthmus, 28 different measurements were necessary. The subsoil was analysed by digging pits and shafts. The work was started by a ceremonial opening. Nero made a speech, made the obligatory first cut with the spade and carried away the first basketful of earth. The labour force consisted of 6000 prisoners from Judaea which Vespasian had sent. The operation probably began in AD 67. Rebellions ending with the suicide of Nero prevented the completion of the canal.

Physical evidence

In antiquity, travellers could still see the remains of Nero's canal. Pausanias (*c.* AD 160–180) wrote: 'And where they started to dig is visible; they did not reach down to the rocky layers, and thus the land is still dry as it naturally is' (Paus. II, 1, 5). The English archaeologist Richard Chandler (1738–1810) noted: 'Nero started . . . to dig and reached about four stadia or half a mile. The trace of this fruitless effort, which were noted by Pausanias, are still visible' (Chandler, 1777): 343). Later explorers also recorded existing traces (Fig. 24).

In 1881 before the construction of the modern canal, the chief engineer made a thorough survey (Gerster, 1884) and thus the remains of Nero's canal are well recorded (Fig. 25). The work under Nero had started on both sides. On the western side, earth had been removed for a length of 2 km. Near the shore the digging had extended below sea level and had already formed a canal. The canal trench was about 50 m wide and the depth was a regular 10 m. Near the 1400 m distance plate on the south side of the modern canal there is a dedicatory relief carved into the rock. It is very weatherbeaten and thus unclear. It probably represents Heracles with his club (Fig. 26). On the eastern side the workers stopped after they had finished 1300 m. The depth reached 30 m at one spot. The breadth at the surface was as much as 40 m. The spoil was deposited

Figure 27. A Greek-oared warship, the *Olympias*, passes through the modern canal in July 1992. The rulers of Greece and Rome did not live to see this event. (Photo: P. Lipke)

next to the canal. At the summit a third construction crew had completed a ditch 400 m long. Of particular importance were the 32 shafts which reached down to a depth of 40 m to prospect the quality of the soil and the rock. These shafts were reused by the engineers in 1881 for determination of the depth profile. The modern canal has been dug along the same line as Nero's and for this reason no remains have survived.

Finally, Herodes Atticus (AD 101–177) should be mentioned. He was the wealthiest man in antiquity and hoped to secure 'eternal fame' by erecting buildings. According to Philostratos, he travelled across the Isthmus and remarked: '. . . that all deeds in life could be forgotten, only a dig through the Isthmus will be a durable work' (Wiseman, 1978: 48). But no deeds appear to have followed these words.

Conclusion

It was many centuries before the Corinth canal became a reality. Between 1881 and 1893 work was undertaken by various companies. Many technical and financial difficulties had to be overcome before the canal opened in 1893. The centenary in 1993 was a quiet event. Knowledge of the Diolkos seems to be lost. In travel guides it is hardly ever mentioned and then only with a few lines. The largest ship trackway in antiquity deserves better public attention.

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