CHAPTER I

INTRODUCTION

THE PHYSICAL SETTING:

The trade of India with the ancient centres of civilization in the Nile Valley, the Levant, Greece and the Fertile Crescent to the West, with the Laccadives, the Maldives and Ceylon to the south, with Burma, the Indo-China landmass, the Malaysian-Indonesian Archipelago, China and Japan to the east, is as old as history itself. Several natural factors encouraged the close commercial links of India with the Indian Ocean lands.

(A) THE PHYSICAL CONFIGURATION OF THE INDIAN OCEAN:

The very shape of the Indian Ocean with its wide seas, protected gulfs and narrow straits, while providing it access to other oceans, makes, particularly its northern part, a land-locked sheltered sea, luring even a technically backward people to venture out in their crude dug outs and seek a living by either fishing, or trade with lands beyond the seas. Walled off in the north, east and west by land masses and opening out only to the poles in the south, it washes the entire east coast of Africa, the southern coasts of West Asia, the coasts of the Indian Sub-continent, Burma, Thailand, Malaysia, Indonesia, Australia and the southern coast of Indo-China under different names, The Indian subcontinent, jutting out into the sea,
divides the northern part of the ocean into two giving India a long coastline with practically sheltered seas on its East and West. The people of the coast of India particularly were, like the Arabians, thrown on the sea from very early times to eke out a living because of the narrow coasts and limited plains hedged in by mountain, forest and desert.

The Arabian Sea to the West gives the Indian Peninsula access to the coasts of east Africa and south Arabia. The innumerable islands strewn in this ocean such as Laccadives, the Maldives, Ceylon, Madagascar, Mauritius, Seychelles, Socotra etc. were convenient stopping places along the sea routes. The Indians, Arabians and the Africans considered this sea as their special preserve and highway of commerce.

The two narrow arms of the Arabian Sea, namely the Red Sea and the Persian Gulf, further bring the lands fringing the Arabian Sea, closer to the Mediterranean. The Red Sea washes the coasts of Ethiopia, Sudan and Egypt on the one side and Yemen and Hijaz on the other. To the north on the Egyptian side of the Red Sea stands the Gulf of Suez separated from the Mediterranean only by the narrow Isthmus of Suez. In the Pliocene and the Miocene times it is known that this patch of dry land was mostly an arm of the sea. (1) The Pelusaic branch of the Nile, which does not exist now, emptied into the Mediterranean not far from the old part of Pelusium. The ancient Egyptians covered this area and connected it to the Nile by canals. On the
Arabian side, is the Gulf of Aqaba, at the head of which stood the ancient port of Ezion Geber and a natural route through the Wadi Araba and westwards to Gaza on the Mediterranean. (2) To the south the Red Sea is linked with the Arabian Sea through the Gulf of Aden, created by the projection of the Horn of Africa which runs for some distance here almost parallel to the Arabian coast. At its western end the Gulf narrows down to a constricted channel where guarding the entrance to the Red Sea stands the strait of Babul Mandeb. To the east of the Gulf is the Island of Socotra, strategically situated to command the entrance to the Gulf. Socotra, the Gulf of Aden and the Strait of Babul Mandeb, together control the passage from the Arabian Sea to the Red Sea. All through the ages, internationally famous ports have sprung up in this area and ambitious rulers have sought to control this all important gateway to capture the east-west trade.

The Persian Gulf gives the lands of the Arabian Sea access to the Mesopotamian Valley, one of the seats of ancient civilization. From the Mesopotamian Valley and the Persian Plateau, the Persian Gulf route gives access to the Caspian and the Black seas on which converged the early trade routes from Europe and Asia Minor. The Persian Gulf further is linked with the Mediterranean coast through the Fertile Crescent, a narrow piece of fertile land wedged in between the Arabian Desert and the Turkish Highlands. Almost all the ancient trade routes from the
Mediterranean coast and from Arabia to the Persian Gulf, ran through the Fertile Crescent and sought a sea outlet to the East through the Persian Gulf. The Strait of Hormuz commands the entrance to the Persian Gulf from the Arabian Sea. It is a narrow, safe, protected passage of about 120 nautical miles long and 95 miles wide at its narrowest, widening to some 135 miles at its broadest. It is a shallow Gulf with depths of not more than 250 feet. To the ancient sea farers with their small sailing ships, the Strait of Hormuz proved a convenient channel to the resource rich area of Mesopotamia and the Persian Plateau. The Gulf of Oman, like the Gulf of Aden, guards the entrance to the Strait of Hormuz. The Gulf of Oman narrows to the strait, and then opens out to the Persian Gulf. Thus the three together, the Gulf of Oman, the Strait of Hormuz and the Persian Gulf, give the Arabian Sea States access to Persia, Mesopotamia, the eastern Arabia coast, the Fertile Crescent, the Mediterranean Coasts and Europe. The coasts of Gujarat, Saurashtra, Cutch, and Sind are separated from the mouth of the Persian Gulf only by a few hundred miles. Right through the ages, the Gulf of Oman, the Strait of Hormuz and the Persian Gulf have played a dominant role in the trade of the Indian Ocean. Empires and Kingdoms have flourished in this area while many of its ports have thrived on trade. Like the Red Sea, the Persian Gulf, the Gulf of Oman and the Strait of Hormuz have witnessed the rivalry of dynasties who sought to gain control of the east-west trade.
To the east of the Indian sub-continent is the Bay of Bengal. The Arabian sea to the west, the Bay of Bengal to the east and the projecting land mass of Peninsular India into the sea give the Indian Ocean its M shape at its upper end. Like the Arabian Sea, the Bay of Bengal provided a safe and land locked sea to the Ancients, giving access to Burma and the Far East. The southern most island of the Andaman group abut on the northern tip of Sumatra, and they were convenient stepping stones on the route to the Indonesian Archipelago which was rich in gold, agallocham, sandalwood and spices. South of the Indo-China land mass, the Asiatic continent disintegrates into a series of peninsulas, islands and promontories with the waters of the Indian Ocean sweeping in and out through narrow straits and channels, protected gulfs and seas, making the entire area accessible to the sea. The Malacca Straits, the Java, Flores and Banda Seas, the Sunda Straits, the Timor sea etc. provide access, to Java, Borneo, the Moluccas, Timor and reach up to New Guinea and Australia. Sweeping the east coasts of Indo-China, where once flourished ancient civilizations, is the South China Sea leading to China and Japan.

The Straits of Malacca, situated between the island of Sumatra and the Malayan Peninsula was a convenient channel between the Bay of Bengal and Java-Banda Seas to the south east and to the South China Sea to the north. But whenever this channel was infested with pirates and smugglers, an alternate route across the narrow neck of the Malay Peninsula, near the
Isthmus of Kra provided a link between the two seas. Kingdoms and ports have had brilliant records of trade in the entire region right through the ages. Other passages like the Torres Strait was avoided because of the strong currents while the Tasmanian route south of Australia was too far removed from the centres of civilization and population to be of any great significance to ancient traders.

Besides these passages which connect the Indian Ocean with the Mediterranean on the one hand and the Pacific Ocean on the other, the passage south of the African continent links the Indian Ocean with the Atlantic. It encouraged the ancient mariners to sail down the east coast of Africa to the Cape and to Madagascar. Even though the credit for discovering the Cape route goes to the Portuguese, it was known to the Indian, African and Arabian traders long before the advent of the Europeans into the Indian Ocean.

The Indian sub-continent itself enjoyed a dominant position in an export-import trade between the West and the East throughout the ages. The partially enclosed Arabian and Bengal Seas and the constricted channels, gulfs, bays and narrow seas brought within easy reach of India some of the ancient centres of civilization such as those of the Nile Valley, the Euphrates-Tigris valley, the Mekong and the Red River Valleys and the Yangtze-Huang Ho Valleys. If a rich inter-course emerged between India and these Valleys the credit goes to the Indian Ocean.
REFERENCES:

PHYSICAL SETTING:

A. The Configuration of the Indian Ocean.


(2) W.B. Fisher, The Middle East, (Methuen), 1950, p.15.


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The Indian Ocean is generally tropical in character and is thus free of frozen waters, snow, ice, fog and mist, which impede navigation in parts of the Atlantic and the Pacific and in the Polar seas. Being closed in the north by a huge land mass and widening to the south towards the poles, it has developed a special wind system, very seasonal in character, but nevertheless significant to the ancient navigators whose sailing ships depended on wind as a source of energy for transport across the seas. It was the predictability of this seasonal winds (Monsoon) that proved a boon to the ancient mariners.

The major portion of the Indian Ocean which has so far been commercially important lies within the belt of the Trade Winds. But the Trade Winds change their course and direction with the changing pressure belts.

Winds and Currents in the Winter Season in the Northern Indian Ocean.

In the northern part of the Indian Ocean, north of the Equator, the cooling of the land mass of Asia in winter brings a reversal of the wind system and they blow away from the Indian sub-continent and crossing the Arabian Sea reach the Coasts of Africa and Arabia as the North East Monsoon Winds.
In the Bay of Bengal, the North East Monsoon Winds blow towards the coasts of the Indian Peninsula from the Bengal-Burmese coasts and strike the Coromandel coast. But south of the Equator in the region of Sumatra, the north eastern winds of the Bay of Bengal curve south east towards Sumatra and Java and blow towards these coasts. At the same time along the coasts of China the north east Monsoon Winds are prevalent, blowing towards the Malaysian Peninsula, Sumatra, Java, Borneo etc., its direction conditioned by the land masses and the islands and archipelagos. (1)

Because of the changing rhythm of the winds in the northern part of the Indian ocean, there is a steady reversal of the currents also when the season changes. No particular current is found flowing throughout the year. Besides these rather predictable changes of the currents with the seasons, the local winds, lay out of the land masses, the temperature and salinity of the sea and the local depth of the basins in the ocean affect local winds and currents.

During the months of the northern winter (the period of North East Monsoon in India) the North Equatorial Current is found best developed between the Andamans in the east and the Somali coast of Africa in the west, south of Ceylon in 5° North latitude. The wind friction drives the waters of the ocean towards the coasts of Africa. At the same time in the Bay of Bengal and the Arabian Sea the currents move according to the
prevailing wind, (from the north east to south west) that is in south west direction, flowing along the projecting land mass of India as the North East Monsoon Drift. Apart from these, there are many large eddies established in this part of the ocean, particularly in the Arabian sea and the Bay of Bengal because of the lay out of the land masses, occurrences of islands, depth of the sea basin etc., which complicate the steady Monsoon Drift of these seas. The anti-cyclonic gyral in the north Indian Ocean during winters is not much developed, yet the distinct westerly movement of the North East Monsoon Drift carries the water to the African Coast which is drifted back in the form of a Counter Current. In the region of the East Indies the currents are very complex.

South of the North Equatorial current is the Equatorial Counter Current which is also best developed during the northern winters. Its main axis lies approximately at 7° South Latitude but it extends from 2° to 8° South Latitude. The flow of the waters of the Equatorial Counter Current is generally to the East, starting from near Zanzibar on the coast of Africa to Sumatra in the east. It has a velocity of 1 to 2 knots quite convenient for the sailing ships of the Ancients. The waters of the North East Monsoon Drift from the Arabian Sea and the Bay of Bengal flow south and join the Equatorial Counter Current in the region of Sumatra and strengthen its flow eastwards. The North West Monsoon Winds which blow in this part in winter
further strengthens the flow of water towards the east.\(^{(2)}\) Hence in winter, in the northern Indian Ocean, the general flow of water north of the Equator beyond Andamans, Ceylon and Somali is towards the west, that is towards Africa, the Arabian Coast, and the Persian Gulf. The stronger branch of the North Equatorial current, and the North West Monsoon drift is towards the Horn of Africa where it turns south along the Somali Coast to as far as Zanzibar. A weaker branch of the drift goes along the Makran Coast, to the Persian Gulf, the Arabian Coast and reaches the mouth of the Red Sea. Between Zanzibar and Java south of the Equator, on the other hand there is an eastward flow of the waters with the Equatorial Counter current. Sailors of the west coast of India could make full use of these winds and currents, go to the Persian Gulf, Arabian Coast and the Red Sea, or strike directly to the ports of the Horn of Africa, and the east coast of Africa to as far as Zanzibar and then strike east with the Equatorial Counter Current towards Sumatra, Java, the Moluccas, Borneo etc. The Chinese on the other hand, could make use of the Monsoons of the Pacific which in winter blows almost in a north south direction, conditioned by the coasts of China and Indo-China, towards Java and Sumatra. The Chinese and the Indian merchants could conveniently meet at any of the ports of Indo-China, Malaysia, or the Indonesian Archipelago, where the two wind systems of the Pacific and the Indian Ocean carried their sailing ships.
Winds and Currents of the Northern Indian Ocean in Summer (3).

In summer when the land masses in the northern Indian Ocean get hot there is a complete reversal of the wind system. The winds begin to blow from the south west across the Arabian Sea towards the west coast of India as the South West Monsoon Winds. They reach the Malabar coasts by April and the Bombay and Gujarat Coasts by June-July. In the Bay of Bengal, the South West Monsoon bypasses the Coromandel Coast and strikes the Orissa-Bengal Coasts as early as April and also the Coasts of Burma. At the same time, in the Pacific Ocean the South East Monsoon Winds blow towards the land mass of China but along the coasts of China, the direction of the wind is conditioned by the lay out of the land and as they blow roughly from Malaya-Java and Sumatra to the Chinese coasts. South of the Equator, in the region south of the Indonesian Archipelago, there is the South East Trade winds which blow towards Java and Sumatra in the eastern section and towards the African land mass in the western section.

As in winter, the Ocean currents also change with the reversal of the winds. With the South West Monsoon Winds gaining predominance in the northern Indian Ocean in summer, two important changes take place. The North Equatorial Current disappears and is replaced by the South West Monsoon Current, the waters of which flow generally from west to east, that is from the African Coast to the Indian Coast. It throws branches
into the Bay of Bengal and the Arabian Sea whose general flow is from the Arabian and Persian Gulf coasts to the coast of Western India and from the Cuttack-Bengal Coasts of India to Burma.

The second great change that takes place in summer is the absence of the Equatorial counter current. It is seen only in the form of many eddies, generally moving to the east.

The West Wind Drift which in winter passes south of Australia, moves northward in summer and after crossing the Equator strengthens the Monsoon Currents further north. As a result of the westward drift of water there is considerable upwelling of water on the east coast of Africa between 0° and 10° south. Strengthened by the Monsoon currents further north it flows north along the Somali Coast as the Somali current. Some of the waters flow along the coast of Arabia to the Makran Coast and joins the south Monsoon Current.

Though the general movement of the water in summer in the northern Indian Ocean is towards the east, there is a cyclonic gyral in the form of a westward drift south of the Equator. It crosses the Equator, runs along the African coasts and turns east and joins the south east Monsoon drift. Along the coasts of Sumatra further east, it turns south and merges with the westward moving Equatorial Current, and reaches the coast of Africa. Another branch of the current moves north to the Bay of Bengal and sweeps towards the Bengal and the Burmese Coasts.
With the convenient reversal of the winds and currents in the north Indian Ocean in Summer, the traders of the west coast of India could return from Africa, Arabia, the Red Sea, and the Persian Gulf ports. Navigation at the height of the Monsoon season was difficult and the ships had to wait long at the different ports for the storms to abate.

In the Bay of Bengal, the South West Monsoon Winds and the currents made travel to Burma easy before the Monsoon set in heavily. Along the coast of China, the South East Monsoon Winds, the direction of which was almost south to north, conditioned by the land masses in the Western Pacific, favoured sailing from the Malaysian Indonesian Archipelago and Indo-China to China and Japan, making direct contacts with those countries possible. To the South of Java, Sumatra, the Moluccas and Timor, was the South-East Trade Winds which helped the traders to move along the Southern coasts of the Indonesian Archipelago. However, these coasts were flanked by hills and had few anchoring places. The more fertile lands of the Indonesian Archipelago in the early days, before plantation agriculture was introduced, were the territories facing the Java, Flores and Banda Seas. But since the sailing ships could berth with little difficulty anywhere, and since some of these islands were rich in sandalwood, agallochum, gold etc., drifting with the wind up to Timor and northwards to the Moluccas was probably considered suitable.
The Winds and Currents of the Southern Indian Ocean:

In the southern Indian Ocean, the seasonal changes in the winds and currents are less marked. The South Equatorial Current flows north of latitude 20° S. between the Australian and the African coast. The main axis of the current is between 10° and 15° S. lat. It has a well-established flow east of 100° Longitude, where its waters merge with those of the West Australian current. In the west, the current strikes the African coast near the island of Madagascar and splits into many branches. The actual bifurcation of the current takes place beyond Madagascar at about 65° East Longitude (East of Mauritius). At 11° South Latitude (a little north of Comoro islands), a branch of the South Equatorial Current flows south, and joins another branch of the same current which flows east of Madagascar and thence through the Mozambique Channel, between Africa and Madagascar. Upto 30° South Latitude, the current is known as the Mozambique current. Beyond this point, the two branches of the South Equatorial Current join and it is known as the Agulhas Current. They are really one and the same current. The Mozambique current is in the form of eddies and gyral\s and becomes well-established only south of 25° South Latitude. The Agulhas current is a narrow current and extends for 50 miles from the Coast. The northern part of the current runs parallel to the Natal coast. The current sometimes attains a velocity of 5 to 6 knots, and ships have been carried by it, against a gale at the rate of 3 to 4 knots. The current follows the
African Coast beyond Cape Agulhas. Here, because of the bank on the south African coast, the current is deflected to the south east. The greater part of its waters turn back near the edge of the Agulhas Bank (22° East). But sometimes the current penetrates as far west as 10° East (Atlantic Ocean beyond the Cape of Good Hope Coast). To the south of Africa, the Agulhas bends sharply to the south, and then towards the east. Some of the waters of the Agulhas also reaches the Cape of Good Hope and joins the Benguela current along the west coast of Africa. Although the South Equatorial Current is visible in both seasons, its velocity changes with the seasonal changes in the winds. During the summer months the South East Trade Winds become very strong due to the impact of the low pressures in the southern Asiatic land mass. The flow of the current then, is quite fast and strong. It is made stronger by the waters from the South Pacific and the West Australian current. In winter on the other hand, the north trade winds blow in the northern Indian Ocean and partly crosses the Equator. The South East Trade Winds, then blow south of latitude 20° South. The South Equatorial current then becomes weak. 

The Southern Indian Ocean, although not as important as the northern sector, for the commerce of the people of the Indian Ocean States, also and favourable winds and currents to carry the sailing ships as far as the Cape of Good Hope. The South Equatorial Current which flows north of 20° South latitude, and
joins the Somali Current further north, helped sailors to come
down the coast of Africa as far as Sofala (20° South). Beyond
this the northern part of the Mozambique current was in the
form of eddies and gyral up to 25° South latitude, discouraging
sailing along the coast of Africa from Sofala to about Lorenzo
Marques. Sofala thus remained for a long time the port beyond
which the sailors met with a rough patch of sea. But the other
branch of the South Equatorial Current flowing east of Madagas­
car, joining the Mozambique current in the Mozambique channel
to the north and the Agulhas current, which reaches the Natal
Coast and finally the Cape of Good Hope, made sailing along the
east coast of Madagascar to Natal and the Cape, easy. If the
Arabians and the Indians knew that Negro Africa was a Penin­
sula and that the Indian and the Atlantic Oceans met south of
Africa, it was because the current and the winds of the Ocean
near the African coast were favourable for sailing ships. The
contacts of the Indians and the Arabians with Madagascar,
Mauritius, the Natal Coast and the Cape, were established long
before the establishment of the Arab Empire in West Asia and
north Africa and centuries before the Portuguese discovered the
Cape of Good Hope route.

South of the Trade Wind Belt in the Indian Ocean is the
Belt of the Westerlies which blows towards the west Australian
Coast. The West Wind Drift also flows in the same direction from
west to east, towards Australia. Striking the Australian coast,
the waters of the West Wind Drift partly flows north and joins the West Australian Current. It then flows north and finally merges with the South Equatorial Current and flows west. The other branch flows along the south Coast of Australia. But for the ancient sailors of the Indian Ocean its southern sector was of little commercial significance.

However, while analysing the importance of the general change of the wind systems and currents in the Indian Ocean and its effect on the navigators in the days of the sailing ship one has to be cautioned against undue rigidity in the division of the year into two clear cut seasons and in the changing of winds at the dividing line. The actual reversal of the winds takes place gradually so that from March to about November the winds are generally towards the coasts of Western India. Further there are local variations with the uneven cooling and heating of the land masses which change the direction of the winds. By October generally there is a gyral in the Bay of Bengal and the winds begin to blow towards the Coromandel coast, and Orissa. It becomes confined to the Madras coast by November-December. Hence one has to view the changing of the wind system in the Indian ocean, not as a seasonal phenomena, so far as the sailing ship is concerned, but as a progression from month to month and week to week. Particular ports might get a favourable wind for short distances depending on the local conditions. But on the whole, the variation during the two seasons were quite rhythmic and dependable.
The Indian ocean was thus one of the kindest of oceans to the mariners of old. Even the frailest of the dug outs could drift with the wind and current or go along the miles of coast flanking the ocean in and out of Bays, Gulfs and Straits. The entire area round the Indian Ocean was rich in resources, well peopled and accommodated a highly evolved civilisation in the river valleys and mountain basins in the ancient period. The sailing ships of the Ancients could go from port to port, sell, buy and exchange and return to their homeland with a favourable wind. It was only when the steamships became a commercial success in the latter half of the 19th century that traders of the Indian Ocean ceased to depend on the kindly winds and currents. The struggle of the steamship to gain mastery over the sailing ship lasted some time and had to await a series of technical developments in ocean transport. Even as late as 1870 A.D. only 16% of the world's tonnage was carried in steamships. It rose to 62% in 1900 A.D. In 1907 the size of the steamship was only 30,000 tons. Side by side, tankers, tugs and barges appeared on the ocean by 1863 A.D. In 1894 A.D. was built the first turbine propelled ship and it was launched in 1905. Further developments came in the latter part of the 19th century and early 20th century in the form of improved harbour facilities. Light houses, cranes, shipping canals such as the Suez and the Panamá, organisation at ports, the discovery of steel and the improvement in boiler efficiency and body of the ship, all contributed to building larger and larger ships,
and concentrating shipping facilities at a few ports. Shipping routes came to be scheduled and the large ships found it uneconomical to call at all ports. The sailing ships with their limited capacity and organizational inefficiency found it difficult to compete with the steamship towards the latter half of the 19th century. In the Indian Ocean, however, the trade of the Arabs and the Indians ceased to be of any importance when the English East India Company passed the Navigation Act in 1814, prohibiting Indian manned ships from playing in the Indian Ocean. The Navigation Act of the British Parliament was the most potent factor which curbed the activities of the Indian mariners in the sea trade of the Indian Ocean. The "Sea Power" of the British, which in effect meant controlling the sea routes by a large navy, permitted the implementation of the Navigation Act and the elimination of the Indians from the Indian Ocean.
References:

(B) PRESSURE AND WIND SYSTEM AND CURRENTS OF THE INDIAN OCEAN.


    b. W.G. Kendrew, op.cit., Chapter IX and X.

    b. W.G. Kendrew, op.cit., Chapters IX and X.


(C) **Navigation in the Gulf of Cambay**:

Apart from the physical facilities afforded by the Indian Ocean and its tributaries, the traders of the West Coast of India were particularly favoured by the Gulf of Cambay and the Rann of Cutch which brought the waters of the Arabian Sea right up to the coasts of Mainland Gujarat, sweeping the north and south coasts of Saurashtra and the entire coasts of Cutch. The two inlets were separated only by a narrow neck of land, between Mainland Gujarat and Saurashtra, which could be covered by road. Geological evidences and the presence of the Nal, prove that at one time the Gulf of Cambay was connected to the Rann and that Saurashtra was perhaps an island. It was the Gulf of Cambay, the Rann of Cutch and the innumerable creeks and rivers which connected the sea ports of Gujarat to the Arabian Sea. Broach is one of the Gulf ports which rose to prominence in the ancient trade of the Indian Ocean.

The Gulf of Cambay extends roughly north of a line from the Gopinath Point on the Saurashtra coast to the mouth of the Tapti in Mainland Gujarat. But to sea farers the entire waters east of Kathiawad and west of Surat-Broach was the Gulf. Many of the famous ports of the days of the sailing ship such as Broach, Gogha, Div, Cambay and Surat were situated on the Gulf at the mouths of rivers or creeks. Two sets of rivers flow into the Gulf, one from Mainland Gujarat varying in length from 70 miles to 750 miles, namely the Tapti, the Kim, the Narbada, the Dadhar,
the Mahi and the Sabarmati and the other, shorter rivers, from Kathiawad, namely the Sukh Bhadar, Utaivi, Kalubhar and Shetrunji. There are, besides, some minor rivers from both sides. In a survey conducted between 1834 and 1856 A.D. it was estimated that the total drainage area of all the rivers together was 83,000 sq. miles. The region gets a rainfall of about 36" annually, but the major portion of it comes in summer during the period of the South West Monsoon. The velocity of the rivers and their capacity to wash down silt into the Gulf were found to increase considerably in the rainy season, and the silt was deposited in the Gulf forming and unforming islands and sand bars, which impeded navigation. But at all times there was enough water in the navigation channels permitting boats of some burthen to move up to the creeks or river mouths. The amount of silt brought down by the rivers created the impression amongst the scientists of the 19th century, that the Gulf was shrinking and would finally close down. The Geological Survey of Bombay in 1837, estimated the silt brought down by the rivers to the Gulf to be about 384 million tons a year, enough to create an island 36 sq. miles in area and 10 feet above sea level. But it was noted that even if the whole silt were to be deposited in the Gulf, it would take at least a 1000 years to fill it up as it covered an area of 2450 sq. miles and in some places, had depths of more than 20 fathoms. It was also noted that the whole silt brought down by the rivers was not deposited in the Gulf, but was removed continuously by an ocean wave.
which rolled and rushed into the Gulf with such great force, twice a day with the tides, scouring the bottom of the sea and acting up to a depth of 10 or even 50 fathoms. This tidal wave carried away 99% of silt brought down by the rivers to a stiller part of the Indian Ocean in the direction of the Laccadives and the Maldives, and to an area of about 20 miles broad along the coasts of Western India. Only 1% of the silt was actually deposited in the Gulf. Some 100 miles beyond the entrance to the Gulf and over the expanse of the Indian Ocean the water was found to be thick with silt while the Gulf itself, beyond the influence of the tides, was free of silt. Hence at the rate of scouring and deposit, it was reported that it would take at least a hundred thousand years to fill up the Gulf completely. It was also noted that while the rivers brought down the silt only during the summer monsoons, the scouring went on all the year round so that there was less risk of a complete siltage of the Gulf.

But even as late as the 19th century, it was noted that changes in the coast were taking place due to the rush of the tides. At Bhavnagar and Gogha the sea had washed away a large piece of land. Keatinge was of the opinion that the sea was gaining on the western shore of the Gulf (Saurashtra coast), while Oldham held that the large amount of silt brought down by the Tapti, Narbada and the Sabarmati was building up land on the eastern shore (Gujarat Coast). But Le Geyt discovered
that at Veraval on the Saurashtra coast, the sea had receded considerably while at Chorwad, Mangrol, Sutrapara and some other places the sea had neither receded nor advanced. In view of these findings, it was concluded that the scouring of the western shores and the advance of the eastern coast of the Gulf was not a continuous or uniform feature, but localised in particular places, subject to the local behaviour of the tides and currents in the Gulf and that the general shape and configuration of the Gulf had remained the same since the last 1600 years, that is since the days of the Periplus. However, the silting of the coasts and the scouring of the sea bed periodically impeded or improved the navigation channels in the Gulf.

The Surveyors of the 19th century also found that the tides in the Gulf were very high. They were of the opinion that the tides had slackened and that in the past they must have been even higher. At Surat the tide rose to 28 feet at ordinary springs, at Broach 30 feet, at Jambusar 33 feet, and Gogha 34 feet. Besides high tides, there were also dangerous Bores in the narrow channels. Between Gogha and the Piram island, the speed of the Bore was as much as 7 to 8 knots, making the passage quite dangerous for the sailing ships. Near Cambay, a Bore was found with a speed of 10 knots per hour. Another Bore near Davan had the same speed as that of Cambay. These tidal Bores while clearing the Channels of silt also created problems in navigation because of their dangerous speed. They
further changed the navigation channels in the Gulf by clearing one and closing another.

The danger to the Gulf therefore, was not so much its complete siltage, but the frequent changes in the navigation channels, bestowing upon one or the other ports international fame for a period and then eclipsing it as the sands closed in on them. Sopara (Bassein in the upper Konkan Coast), Somnath Patan and Broach were known to be thriving ports during the pre-Mauryan and Mauryan times. The Periplus also mentions Broach as a port of international trade in the first and second centuries A.D. In the eleventh century it was the turn of Cambay to take up the responsibilities of an international port. In the 16th and 17th centuries Surat shot into prominence as the Emporium of Mughal India and a port of the British. The fame of a port however was not entirely dependent on its physical facilities, but also to their being outlets of kingdoms which enabled them to draw the resources of a wide and rich hinterland because of efficient administration.

During the period that Broach attained fame as an international port the Gulf was known as the Gulf of Barygaza. When Somnath Patan is mentioned as one of the major ports of the Asokan Empire, Broach was the nearest port across the Gulf on Mainland Gujarat and a link between Somnath Patan and the Gangetic plain through Malwa. But sailing in the Gulf was not very easy. During the period of the Roman contacts with India
(1st and 2nd centuries A.D.), when the major trade of the Red Sea ports of Roman Egypt swung to the south, Broach was still acclaimed by the Romans as a great port of international trade. But the Periplus also mentions the difficulty of sailing in the Gulf. Large ships, called junks, called at Broach bringing the luxuries of the Far East in spite of all difficulties.(2)

By the 10th century, changes in the navigation channels brought Cambay into prominence as a port of international trade. Masudi (916 A.D.) found the Gulf deep and commodious. It was called the Gulf of Cambay in view of the importance of the port of Cambay (Kambayat). Masudi however says that the sands were visible at many places at low tide and that navigability was then restricted to the middle of the channel. He also noted the violence of the tide and the difficulty of sailing in the Gulf when winds became rough. The tidal floods in the Gulf near Cambay, says Masudi, "rush from the mouth of the Bay like a huge mountain".(3) From the reports of the Arab traders of the 10th to the 14th centuries, it is obvious that frequent changes were taking place in the configuration of the coast of the Gulf of Cambay. Masudi (916 A.D.) mentions Cambay as being situated one league (3 miles) from the sea.(4) Ibn Hawkal (968-976 A.D.) places it 6 miles from the sea(5), while Edrisi (Irizi 1153 A.D.) says it is a coasting station of the Solankis.(6) In the middle of the 14th century (1340 A.D.) Ibn Batuta noticed that ships bound for Cambay had to anchor at Gogha.(7) By the end of the
15th century and beginning of the 16th century the Gujarat Sultan Muhammed Begada had to spend huge amounts to keep the navigation channels to Cambay clear of silt. Barbosa who came to Cambay in 1514 A.D. reported that sailing at the head of the Gulf was difficult and dangerous and that it should not be attempted without expert piloting. "Between Cambay, Broach and Gandhar along the coast and in the Gulf", says Barbosa, "the ebb and flow in the Gulf is so great that in every short space of time the sea left uncovered four to five leagues of land. The sea ebbed and flowed with such wonderful speed that any ship caught in the bore is lost.".

In the 16th century the navigation channels to Surat improved and that port began to eclipse all other ports in the Gulf. In 1626 A.D. Herbert found the Suwali channel to Surat most convenient. Mandelslo (1638 A.D.) noticed that though the Tapti mouth was shallow, it could accommodate ships of 70 tons burthen. Ships of 1000 tons could anchor at Surat in the mid 17th century A.D. But Tavernier, who travelled in India during the reigns of Shah Jehan and Aurangzeb, says that vessels sailing upto Surat had to go to Div and then anchor at Suwali, situated four leagues from the port, but only 2 leagues from the mouth of the river. He says that vessels could not enter the river of Surat until they were unloaded because of the sandbanks at its mouth.

In 1774 A.D. Stavorinus saw a bar at the mouth of the Tapti making the Suwali channel also unserviceable. The
Dumas Channel was navigable till the 19th century A.D., although trade had fled from Surat to Bombay by then.

In the latter part of the 17th century, Fryer (1673-1681 A.D.) found the channels to Broach improving but the entrance to the Narbada was blocked by sand. Broach however never regained its former glory as by this time, the European East India Companies had already captured the trade of Gujarat and of India.

In the latter part of the 17th century and in the beginning of the 18th century (1680-1720 A.D.) Hamilton described Gogha as a fit harbour, a fact which made the English East India Company interested enough in the Bhavnagar coast to set up an independent Raja under its protection.

In the 19th century Milburn (1810 A.D.) discovered Dholera to be a port of importance. But in 1812 A.D., the river Bhadar, the waters of which scoured the creek, abandoned its course, silting up the Dholera creek. Jambusar and Gangva were found functionable in 1817 A.D. The rapid tides had cleared the channels of the silt. But sands were found deposited at other places along the coast.

In 1853 A.D. the Gulf of Cambay was described as "abounding in shoals which were shifting continuously" but the tides were still very high "rising upwards to 30 feet", The Gulf was neither safe nor was there any roomy harbour for ships.
force of the tides caused much damage to the ships. The English who were now in control of the Indian trade were continuously diverting it to their port of Bombay. The steam ships were gaining mastery over the sailing ships in commerce by the latter half of the 19th century. The commercial policies of the new rulers and the technical developments in transport and harbour facilities required trade to be centralised at particular ports which could accommodate very large ships. The small sailing ships, which functioned satisfactorily at river ports off in the natural creeks and capes, could not stand the competition from the mechanised harbours and ports of the 19th and 20th centuries. The development of railways, and roads converging on these new ports further divorced the old ports from their traditional hinterlands, forcing them to draw their sustenance from the immediate surroundings. Gradually the small ports, including Broach lost their significance as international ports and confined themselves to a coastal trade in the commodities of a restricted hinterland. The Navigation Act of 1814 A.D. further brought on the Indian traders legal restrictions to trading in the Indian Ocean. The Indian and Arab trade of the Indian Ocean in which all the Indian Ocean States had participated was sacrificed to boost the trade of the English.

Right through the ages therefore, it was a combination of factors, both physical and human, that brought into focus one or the other ports in the Gulf. Their trade continued in
the same direction to the African-Arabian coasts, the ports of the Red Sea and the Persian Gulf to the West, to the coastal ports, and Ceylon to the south and to Burma, the Malaysian-Indonesian Archipelago, China and Japan to the east. When political and administrative factors were in favour, the ports were able to widen their hinterland and foreland. But during periods of turmoil and political disturbances, the links of the ports with their hinterlands were broken, causing a setback in their overseas trade.

A constant feature noticed in the dynastic struggles in the sub-continent is the drive to the sea. The dynasties of both the Indo-Gangetic plain and the Deccan Plateau, at all times, found the need to reach the sea coast to enable them to control or at least share the international trade. In this struggle Gujarat, with its long coast and thriving ports was always a target for both the Indo-Gangetic and the Deccan Powers. The inclusion of the Gulf ports in one or the other of the political units changed their hinterlands; such changes were frequent in times of turmoil making the trade of the Gulf ports unstable. Very often when political unity was at its lowest ebb, these ports were left to fend for themselves. The sheer strength of their trade sometimes permitted them to set up independent kingdoms and thrive mainly on a transit trade or an entrepot trade. Broach was no exception to the general pattern of the trade of the Gulf ports. The Gulf of
Cambay was the nearest and the most convenient outlet for the landlocked kingdoms of the Gangetic plain, the Malwa plateau and the upper Deccan Plateau. It was the sea link between much of the rich lands of India and the thriving civilisation, of West Asia, Africa and the Far East.
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NAVIGATIONS IN THE GULF OF CAMBAY.

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(3) a. Elliot and Dowson, History of India as told by its own Historians, (Reprint, Kitab Mahal), Vol. I, p. 11.


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Navigation in the Narbada:

A port is the link between land and sea traffic. It is primarily a commercial centre to which manufacturing is attracted as a secondary function, because of its huge trade and population. Some advantage in transportation is fundamental to the growth of a commercial centre. In the early days of Man's history, when roads were crude and risky and the cost of transporting goods by land, even for short distances, was prohibitive, a situation on the banks of rivers was considered a commanding location for commercial towns, the river itself acting as the highway for contacts with a wide territory. A port, being the link between sea trade and land trade had to be necessarily located at the meeting place of sea routes and land routes. When the rivers were the highways of land traffic, a situation at the entrance to a river was deemed a suitable site for ports. In the days of the sailing ship, boats were small and the estuaries of rivers were convenient places for anchoring sea-going vessels. They could often sail up the rivers, without break of bulk, to some distance inland by water, where the port was situated. Most of the ancient commercial-cum-port towns were therefore positioned at a convenient place down river, at a point where sea going vessels discharged their load to river going vessels or where major land routes connected them to the interior. Up river traffic, against the flow of the river, being difficult for the sailing ship, unless there was a
favourable wind and tacking was possible, a river port was of necessity situated as near to the sea as possible. The greater relative advantage of the river as a means to cheap transportation thus created the river ports. They could not have supported their large population dependent on tertiary occupations without the advantage of river transport. (1)

Broach was situated on the estuary of a navigable river. The sea routes from the Persian Gulf, the Red Sea and the Far East crossing the Indian Ocean were connected to Broach through the Gulf of Cambay. The Narbada served Broach as a link with its hinterland. It has a course of some 700 to 800 miles in length and flows through a territory which was once rich in agriculture, manufacture and forest products. Its drainage area is estimated to be about 36,400 sq. miles. Its main tributaries, the Orsang on the right bank and the Karjan, Amaravati and the Kaveri, the last rising from the Rajpipla hills to the south, were also used by small country crafts as down river traffic to the Narbada was easy. (2)

Broach stands some 30 miles inland from Lohara point where the river meets the Gulf of Cambay. The entrance to the mouth of the Narbada is about 13 miles in width, quite commodious for the sea going vessels of the Ancients. It flows for about 100 miles inland through a flat fertile plain, its breadth varying from one mile at Broach to half a mile 70 miles upstream. The town of Broach is situated on the Northern bank of the river,
on the top and slope of a hillock which rises from the river bank. The northern bank of the river is much higher than the southern bank. It consists of alternate layers of sand and clay mixed with nodular limestone in varying thickness. But the lowest part of the bank, about 12 ft. from the bed of the river, is formed of tenacious clay which can withstand floods. The southern bank is low, about 21 ft. above the fair weather level of the river, and opens out to a broad plain, either cultivated or covered with brushwood. The river shows signs of having changed its course. About one mile south from the left bank (southern bank) is an abandoned channel which is believed to be the old course of the river Narbada. A legend says that Bhrigu (after whom Broach is named) hearing a disciple's complaint that he had to walk a great distance to reach the river, asked him to return from the river dragging his clothes behind him but without looking back. When he reached Broach he found the waters of the Narbada flowing at his feet and not at Ankleswar.

The old town of Broach was well secured against the flood of the Narbada. Standing on the high northern bank on flood resistant foundations it was further made safe by a strong stone wall which stretched along the river bank from west to east for about a mile. A line of fortification passing up the sides of the hillock on which it is situated, encircled the town, the ruins of which can still be seen. From this high
ground old Broach overlooked an open plain. To the south flowed
the Narbada. Much of the area between the Narbada and the old
town is now built up. (7)

Broach is a tidal port. The influence of the tide is felt
some 20 miles inland from Broach. These tides while clearing
the navigation channels of the river, also deposit the silt
when the flow slackens, forming and unforming islands and shoals
and impeding navigation. At Broach the speed of the tide was
reported to be at least 5 to 8 knots an hour with a rise of 30
feet even as late as the 19th century. (8) The tides were found
to have slackened during the ages so that they must have had
a greater speed at a time when Broach was an international port.

The tides which deposited and washed away the sands made
the navigation channels unpredictable so that sailing up the
river to Broach could be done only by expert piloting. Even at
a time when the fame of Broach stretched from the Mediterranean
to the Pacific, navigation in the Narbada was beset with hurdles.
The ocean wave which rushed into the Gulf twice a day scouring
the sea bed and clearing the Gulf of much of the silt brought
down by the rivers, slackened along the coasts, where in an
area of about 20 miles the silt was deposited. This action of
the ocean wave silted up the mouths of rivers and made approach
along the coast difficult. The Periplus of the Erythraean Sea
says that the Government had to send pilot ships as far as
Veraval point in Syrastrene at the entrance of the Gulf and
guide the ships safely from station to station and to Broach. The Periplus also mentions that it was difficult to land at Broach because the coast was low and there was no landmark to guide the mariners. The clearing of the navigation channels in the Gulf and the rivers was one of the chief concerns of Governments which had to maintain these river ports for international trade. When the Government neglected dredging the river channels and sacrificed the interests of the small ports to divert the trade to Bombay, the process of shoaling up in the Gulf and rivers was speeded up and the ancient and medieval river ports lost their trade.

In the 17th century Fryer (1673-81 A.D.) noticed that the river Narbada could be crossed only by skilful piloting at Broach. Since the sailing ships were small (300 tons) they could reach the walls of the town guided by pilots. Broach was a good centre of trade in Fryer's time. Goods came to Broach from the Persian Gulf, Red Sea, China and the Far Eastern Islands in comparatively large boats.

In the 19th century Bishop Heber noticed that the Narbada was too shallow and that a sand bar had developed at its mouth impeding navigation. Except for lighters, no vessel could go over the bar. Neglect of the navigation channels, the building up of Bombay on the west coast, and the invention of the steamship in the 19th century gradually put the river ports out of function except for a coastal trade in country crafts.
Beyond the limits of the Gujarat plains the Narbada is navigable only in patches. Where the river runs through the Eastern hills of Gujarat and falls from the Malwa plateau to the plain, a distance of some 80 miles from Makrai to Haranfal, it is characterized by rapids and falls. At present vessels of 95 tons can go up to Broach, 35 tons up to Shamlapitha near Jhagadia and only vessels of 10 tons up to Gora. Further upstream from Tilakwada, which is 35 miles straight from Broach but 65 miles along the meanders of the river, it is difficult for vessels of any size to sail against the current. In winter small vessels can go up to Mokhdi falls and by unloading at Mokhdi falls and loading on the other side of the falls, they can go further for about 15 miles. But in summer, sailing is possible only up to Tilakwada. Tilakwada seems to have been the limit of the navigability of the river at one time as suggested by the ferry and the innumerable temples on its shores. Sailing up to this point from Broach today takes 5 days for a boat of 10 tons. But when the speed of the steam, rail and jet plane was not known to the traders and travellers, the speed of 13 miles a day was considered quite adequate for commercial contacts. Compared to the other rivers of Gujarat, the Narbada had a long course and flowed through a rich territory. The Periplus reports that agate stones used to come to Broach from Jabalpur, when the industry was located in that port. The Jatakas, whose date is fixed at the 5th century B.C. but the folk tales on which they are based (according to Kennedy) belong to a
much earlier date, say that boats carrying 700 passengers landed at Broach. The Jatakas are full of references to Bharukachcha from where large ships sailed to distant lands. The navigable channels of the Narbada in the heydey of Broach must have been maintained well by an efficient Government.
References:

(D) **Navigation in the Narbada**


By land also India was favourably situated in relation to the early areas of civilization such as the Mesopotamian Valley, and the Fertile Crescent to the West and to the Yangtze, Huang-Ho Valleys, the valleys of the Irawathy and the Mekong valley, to the east.

Although the mountain rampart in the north west of the sub-continent separated the Indus Valley from the Mesopotamian Valley, the highlands that stretch from Karachi to the Pamirs were, from the human point of view, the eastern end of the Turkish Persian-Afghanistan plateau and as such areas of contact rather than zones of isolation. The proto-Australoids the Dravidians and the Aryans came to India through the natural routes in these mountain ramparts. So did the Turkish, Mongols and the Afghans during the medieval period. To a people used to the Turkish, Iranian and Afghanistan scenery, there was nothing alien in the environment of the frontier highlands and mountain basins of the north western frontiers of the Indian sub-continent. Neither the mountains nor the River Indus were really barriers to human movement even in the ancient times. Whenever hordes from the Central Asiatic Plain and Turkistan disturbed the settled agricultural people of the Mesopotamian Valley, there was a backwash of immigrants to the mountain basins of the north western frontiers of India, where they
perhaps took refuge and got characterised in area. Gradually the major mountain passes and river valleys in these ramparts led them to the Indus Valley which was comparable in fertility and cultural development to the Mesopotamian valley. There has been a gradual infiltration as well as sudden thrusts, of people across these hills and natural routeways right through the ages. There were periods in history when the Indus Valley, the Persian-Afghanistan Plateau and the Mesopotamian Valley, or at least parts of these, were under one administrative control. During times of peace these routes were used for commerce and a brisk land trade is known to have existed between the Indus and the Mesopotamian Valley. The major natural routes which facilitated these links were the valleys of the Swat-Chitral (leading to the Dakka or the Khyber Pass), the Kabul valley (leading from Kabul to Peshawar (old Takshashila), the Khurram Valley, (leading from Kabul to Kohat an old market town in the upper middle Indus Valley), the Tochi Valley, (leading to Bannu on the Indus) the shortest route from Ghazni to Multan, the Gomal-Zhob valleys (one of the oldest trade route between the Afghan-istan Plateau and the Indus), (1) the Bolan pass (leading from Kandahar to Kalat, an old market town in Baluchistan), and lastly the Makran coastal route (leading to the lower Indus and the Delta). (2)

The Indus Valley was also connected by natural routes to the Gangetic Valley in the east through the Aravalli hills and the Delhi Gate (3) and to Cutch, Saurashtra and the Gujarat plains.
to the south and south-east through the navigable Indus, whose course in the ancient past was much further to the east than it is today. Mainland Gujarat was accessible to Saurashtra through the Wadhwan - Viramgam route. Rajasthan (which was not as dry as it is at present) was accessible to Gujarat through the Mount Abu gateway.\(^{14}\) If it was in the minds of people to go to the interior of the sub-continent, the rivers Sabarmati, Mahi, Narbada and Tapti were highways to Malwa and Central India.\(^{15}\) The Narbada Valley and Broach had therefore a very early and direct connection with the Indus-Valley people.

There were two natural routes from the Gangetic Valley to the Gujarat plains and Broach. The one to the west was through Malwa (Mandasaur, Mhow and Indore) and the Dohad Godhra gaps. The route converged on the Narbada and its estuary at Broach. The second route was through the Son Valley in the east to the Jabalpur-Mandla gap and from thence along the Narbada to its mouth.\(^{16}\) Both these routes to the Narbada Valley were not only of commercial importance right through to as late as the 19th century, but also of great military significance in times of political turmoil.

The lower Narbada and its estuary was also linked by natural routes to the Deccan Plateau. To the South of the Narbada, the Satpura range afforded a gap near Nimmar (Khandesh) which gave direct access to the upper Deccan Plateau\(^{17}\) and to
the old trading town of Paithan. Besides the Satpura route which connected the Narbada Valley with the Deccan, Broach was also served by a coastal route to Konkan, Kanara and Malabar, between the Western Ghats and the sea. A ferry across the Narbada existed at least in the 1st century A.D., if not earlier, to bear witness to the importance of the coastal route to Broach. All these coastal states had access to the Deccan Plateau through gaps in the Western Ghats which gave Broach alternate routes to the Deccan and the deep south. The better known passes in the Western Ghats which were in use frequently by traders were the Trimbak pass leading to Nasik (the Vaitarna-Godavari valley), the Thal Ghat, the Nana Pass, the Bhor Ghat (Khandala), the Amba Pass, Palghat, Aramboli and the Shencottah Passes. Once the Narbada was crossed these natural routes gave Broach access to the entire peninsular India except for a few minor barriers of hill and river and the barrier of distance.\(^{(8)}\)

To the east, the extension of the Gangetic route to Bengal through the narrow defile between the Himalayas and the Chhota Nagpur Plateau linked Gujarat with Bengal, Bihar and the eastern frontiers of Assam and from thence to Tibet and China in the north and north east, and to Burma in the east and south east. The Bum la, the Tse la, the Subansari Valley, the Brahmaputra itself, the Yonggyap Pass, Kangri Karpo la and other gaps in the north eastern Himalayas were the most used by the traders of Bengal, Assam and the Gangetic Valley.\(^{(9)}\)
The commercial energy of Broach sometimes stretched its hinterland across these strategic gaps to China and Tibet by land.

Both by land the sea therefore, India was favourably situated to carry on a trade with Western Asia and Africa to the West and with South-East Asia and China to the east. The land routes across the Indo-Gangetic plain converged on one or the other river ports of Gujarat as they were the sea outlets for an otherwise landlocked territory. Besides, the economy of Gujarat was always complementary to that of the Indo-Gangetic plain. Having a long coastline facing Africa and West Asia, its people were traditionally dependent on overseas trade, and encouraged to produce commercially valuable commodities. The Indo-Gangetic plain on the other hand was an area of surplus grain which could be exchanged for the products of Gujarat and those that came to her by her overseas contacts. The trade routes between the Gangetic plains and Gujarat, particularly those through Malwa, were some of the busiest in the history of the sub-continent. Bengal, the alternate sea outlet of the Gangetic plain, on the other hand, had an economy similar to that of the Gangetic plain being a grain rich area. An exchange trade between the two was discouraging. Further Bengal faced the south east Asiatic countries. By the time the Indian trade was well established in the eastern waters, the maritime traditions of Gujarat were rooted deeply enough for the Gulf ports to take an active part in the Far Eastern trade as well.
also maintained a trade with Peninsular India by land whenever political factors permitted. Many of the products of the Deccan entered the overseas trade of India through the Gujarat ports during the days of the sailing ship and bullock carts. The importance of the "natural routes" and country roads declined only with the coming of the rails and metalled roads in the 19th and 20th centuries. But even these sought the facilities offered by nature, particularly when economic advantages coincided with natural advantages.
References:

(E) LAND CONNECTIONS OF INDIA WITH THE EARLY RIVER VALLEY CIVILIZATIONS:


