

## NAVIGATION

# THE FACTUAL DESCRIPTION OF A SEA ROUTE TO INDIA AND CEYLON BY A GREEK MASTER MARINER FROM ROMAN EGYPT

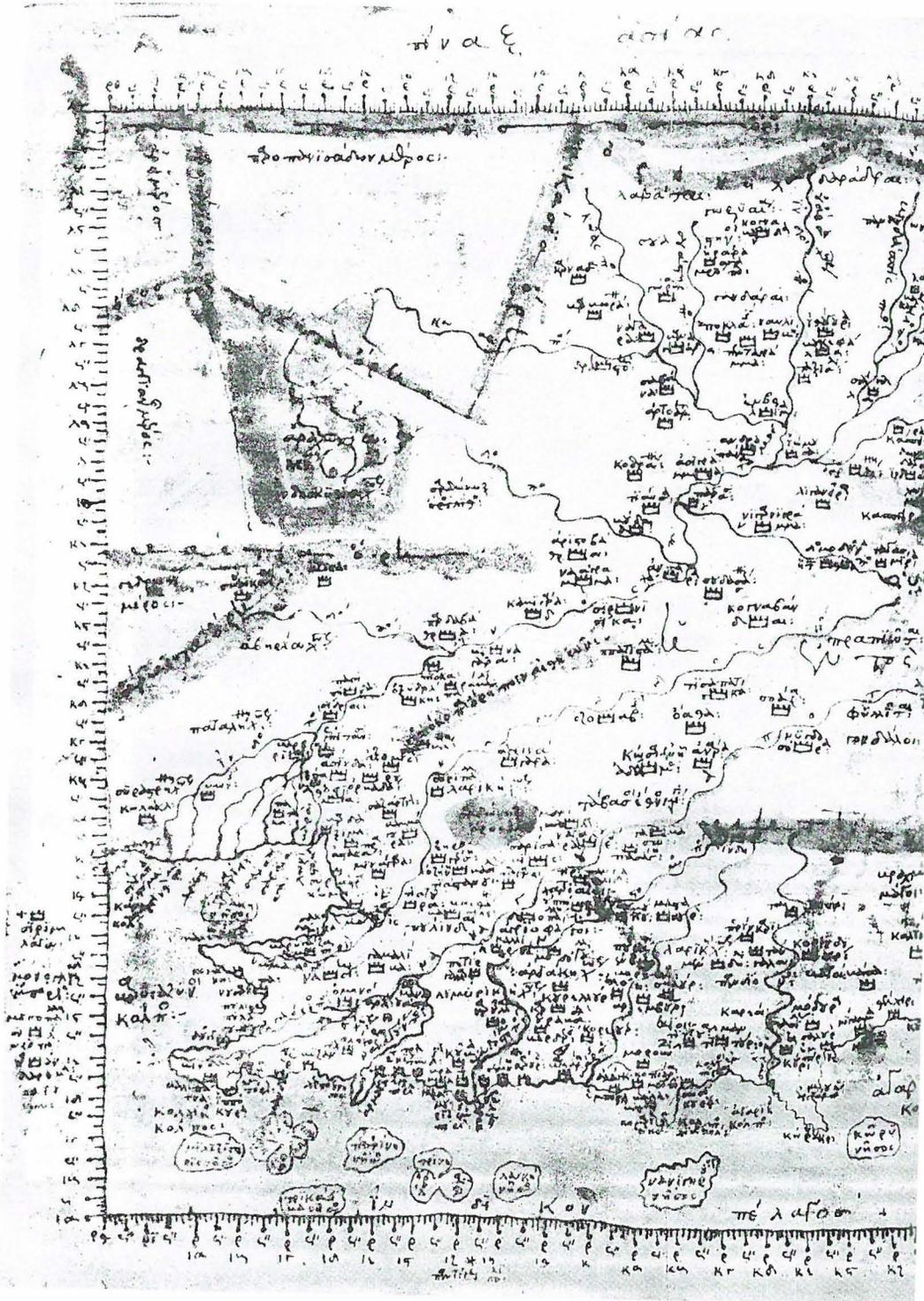
BY ANANDA ABEYDEERA

*... the town [Muciril], whither the good vessels,  
master pieces of the Greeks come brazing the water  
of Periyâr white with foam, bearing gold, and  
laden with pepper return ...*<sup>1</sup>

For a proper understanding of how India and Ceylon were perceived by ancient Graeco-Roman navigators, it is necessary to consult the “Periplus Maris Erythraei” (abbreviated PME henceforth).<sup>2</sup> It was dated sometime in the second half of the first century A.D.,<sup>3</sup> almost contemporaneous with Strabo (64 B.C.–21 A.D.) and a little prior to Ptolemy (between 100 and 170 A.D.), the two “giants” of the geography of classical times. This work, produced in the form of a practical manual meant for a sea-faring trader in the Indian Ocean, provides a wealth of information on Western India seen through the eyes of a navigator, and describes a peninsula not portrayed in Ptolemy’s “Geography”. India, foreshortened from the North to the South, appears as an irregular pentagon (Fig. 1) whereas the adjacent island of Taprobane<sup>4</sup> (Fig. 2), overstretched beyond the equator to 2° 30’ S. instead 6° N., is given continental magnitude by Ptolemy. By comparing the configurations given to these countries in the “Geography” with their descriptions found in the PME, we can understand the complexity of the problem: the nature of perceptions of India and Ceylon in the geographical thought of classical times versus factual descriptions of ancient trade and navigation in the Indian Ocean.

Both books, almost of the same age, present us with an amount of complementary information on India and Ceylon that it is impossible to dissociate one from another in a study that looks into the nature of perceptions of these countries in the Graeco-Roman system of geographical exploration. Both books do, however, diverge in their viewpoints concerning the geography of these countries. One is a treatise on the mathematical geography of the inhabited world as it was then known to Ptolemy the astronomer. The other is a practical handbook of a Greek-speaking merchant sailing from Egypt to India for the purposes of commerce. The two nearly contemporary authors also differ widely in their methods of

Following double-page: Fig. 1 *India within the Ganges from a Greek manuscript of the “Geography” reproduced by Louis Renou in: “La Géographie de Ptolémée. L’Inde” (VII. 1–4). Paris, Édouard Champion, 1925.*





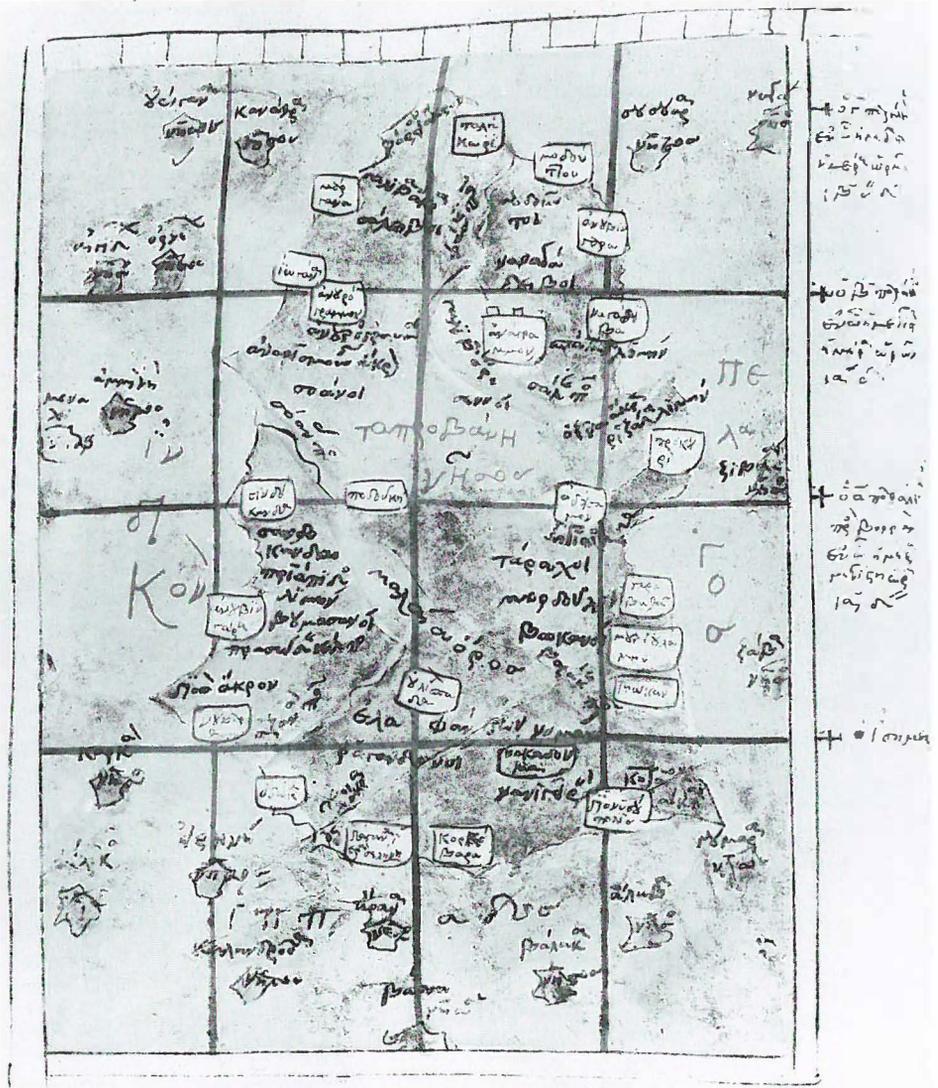


Fig. 2 The island of Taprobane in the “Geographie de Ptolémée, réproduction photolithographique du Monastère de Vatopédi au Mont Athos”, edited by Victor Langlois. Paris, Firmin Didot, 1867, folios civ-cv. Courtesy of the Newberry Library, Chicago.

describing the countries in question. Ptolemy puts emphasis on the coordination of astronomical calculations for determining the position of the geography of a country, whereas the anonymous skipper stresses navigational safety and such other details a navigator would most value while sailing for various ports of call in the Erythraean Sea in search of merchandise.

What Oliver Thompson wrote with regard to these disproportionate representations of India in “Tabula Asiae X” and of Taprobane in “Tabula Asiae XII” of Ptolemy’s “Geography”<sup>5</sup> – here slightly paraphrased – called attention to a possible explanation for this dilem-

ma which vexed historians of recent times: In India as elsewhere Ptolemy tried to combine reports of many kinds and times. For the representation of India, the result is a remarkable confusion because he conceives its geographical frame so badly. His map, though so detailed, is far worse in general shape than that of the skipper of the “Periplus Maris Erythraei” or even that of Eratosthenes. How he came by this ruinous distortion is not clear. It may partly be a consequence of the extravagant notion of Taprobane’s extent which Ptolemy absurdly stretches beyond the equator.<sup>6</sup> It is precisely this decisive mistake of Ptolemy in not determining properly India’s general form and outline which preoccupied yet another recent writer.<sup>7</sup>

Seeking a possible explanation in the Indian cosmographic texts for causes which might have generated this deformity, Schwartzberg draws our attention to the troublesome usage of the term *dvīpa* which is variously rendered as “island”, “island continent” or simply “continent”. Referring to what this term might designate in different contexts, he continues, *If one assumes that the Puranic Dâksinâtya or Dakṣiṇâpatha (the southern region of Deccan) was perceived as a dvīpa beyond the east-west trending Vindhya Mountains, then it might have been taken as a great southern island without any recognition of its separateness from ancient Lanka.*<sup>8</sup>

This amazing assumption does not receive even a modicum of support because neither Dâksinâtya nor Dakṣiṇâpatha is mentioned by Ptolemy in his “Geography”. In order to perceive the southern region of the Deccan as a *dvīpa*, one would need a Sanskrit or a Pali term such as *Dakṣiṇâpathadvīpa* or *Dakṣiṇâdīpa*, respectively similar to composite names such as *Dakṣiṇâbaratârḍha*<sup>9</sup> or *Dakṣiṇâ-janapada*.<sup>10</sup> Indeed not only can such name not be found among the plethora of place names of the Vedic, Puranic<sup>11</sup> or Buddhist literature, but even the mere idea of conceiving a name conjoined with a hybrid-suffix such as *patha-dvīpa* is fanciful. Only one or the other will be used in naming the country. For *Dakṣiṇâ* meaning “south” or “right” and *patha* signifying “path” or “way” in Sanskrit

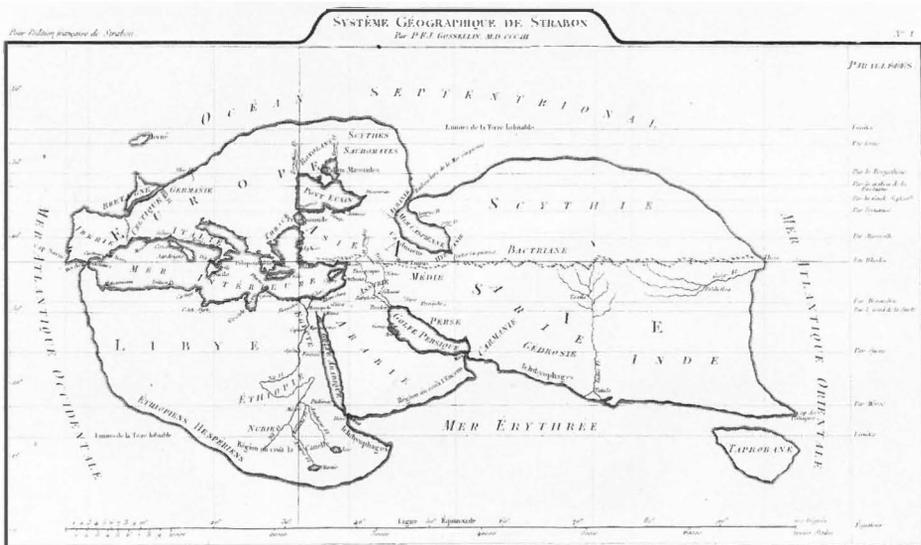
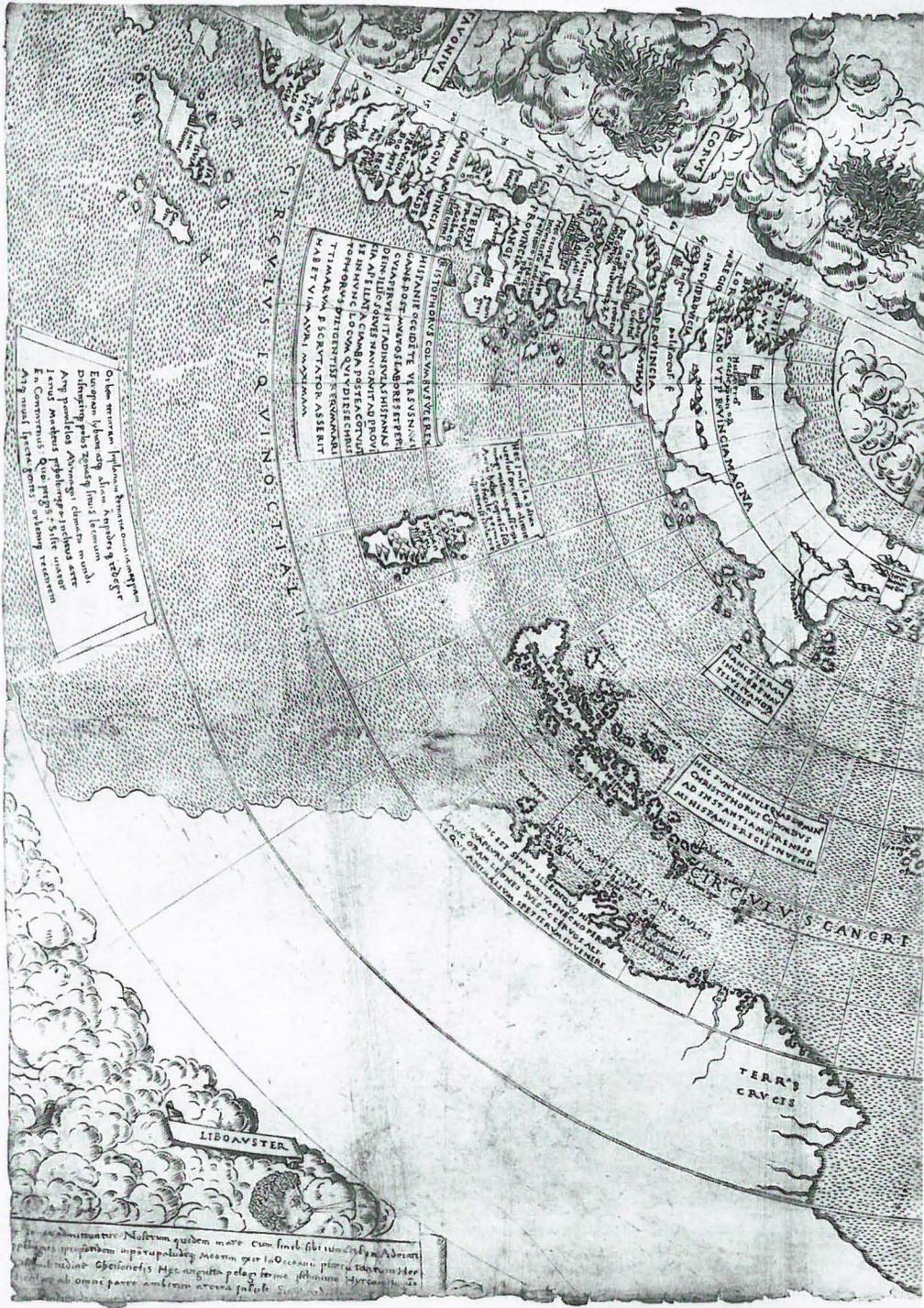


Fig. 3 The earth according to Strabo as reconstructed by P.F.J. Gosselin, in the “Géographie de Strabon”. Paris, Imprimerie impériale, 1803, tome I, plate V entitled “Système géographique de Strabon”. Courtesy of The Newberry Library, Chicago.





more than suffice to designate the country lying to the south of the Narmada River. This was also the customary name of Southern India in ancient inscriptions<sup>12</sup>; as opposed to *Daksinâpatha*, the term *Uttarâpatha* designated North India as a whole.<sup>13</sup>

Given the absence of a Sanskrit, Prakrit or Pali form with the suffix *dvîpa* conjoined to Dâksinâtya or Daksinâpatha in the Indian literature pertaining to geography and cosmography<sup>14</sup>, the writer's use of the vernacular is somewhat suspicious. Even in the authoritative "Studies in the Geography of Ancient India" of Dines Chandra Sircar<sup>15</sup> or in the study of Francesco L. Pullé<sup>16</sup>, professor of Sanskrit successively at Padua and at Florence or in that of Williebald Kirfel<sup>17</sup> devoted to the subject, we have not found the slightest trace of such a name. However that alone does not quite settle the matter, for the same writer seeks support for his argument in the following commentary by Gossellin on Ptolemy's India. Schwartzberg bases his commentary on a translation he made himself from French to English: *The deep embayment of the gulf of Cambay, which is to the south of Gujarat, was able to appear to them [ancient navigators] as the beginning of the strait that they knew should separate Taprobane from India. A sense of order made them continue this strait up to the Gulf of the Ganges [Bay of Bengal], across the continents and from that time forward the eastern peninsula of India, considered as an island, could be confused with Ceylon, to which one [i.e., the geographers of Alexandria] assigned the entire extent which that part of Asia ought to have had*<sup>18</sup> (Fig. 3).

Thus is the wording of a seemingly most ingeniously expressed commentary by Gossellin purporting to explain Ptolemy's gross mistake in the foreshortening of India. The purpose of the above quotation was to lend support to the writer's assumption regarding the error that persisted for a long time in European cartography and which was exemplified by the maps derived from the "Geography" of Ptolemy. These maps, while seeking to incorporate the geographic coordinates of Ptolemy, depict the island of Taprobane out of proportion and located beneath India, an India without the triangular configuration for its peninsular south (Fig. 4).

In this article, I present evidence that India's missing peninsular form has nothing to do with the excessive magnitude given to Taprobane by Ptolemy and that the presumed island concept that Ptolemy may have entertained for curtailing India is lacking justification by any evidence, whether geological, archeological, epigraphic or cosmographic. As I shall be demonstrating, Gossellin's assumption is singularly wrong and the quotation on which his commentator depends on is equally erroneous. A close comparison of Gossellin's with the English translation reveals several obvious discrepancies. It appears, in fact, as if the quotation has been conveniently tailored to lend support to the writer's own assumption. Let us take these deviations one by one in the order of their occurrence in the quotation. They may appear trivial at first glance, but each discrepancy, by not rendering exactly what Gossellin says, adds a certain amount of weight to an argument which does not hold. *L'enfoncement du golfe de Cambaye* is rendered as *The deep embayment*. Since Gossellin does not write "l'enfoncement profond" it is superfluous, if not calculated, to add "deep" to the embayment, as both deep and shallow embayments can exist. If one wants to make an embayment appear as a strait then one can think of an adjective such as "deep" in order to stress an element "en plus" to add conviction to one's argument.

A second misrendering of Gossellin's text is *A sense of order* which does not at all convey the meaning of *l'esprit de système*. A fair sense of the expression can be rendered as *their*

Preceding double-page: Fig. 4 *The map of the world designed by Giovanni Matteo Contarini and engraved by Francesco Rosselli, Florence, 1506, depicting the virtually ignored Peninsular form of India and greatly exaggerated Taprobane. Courtesy of The Newberry Library, Chicago.*

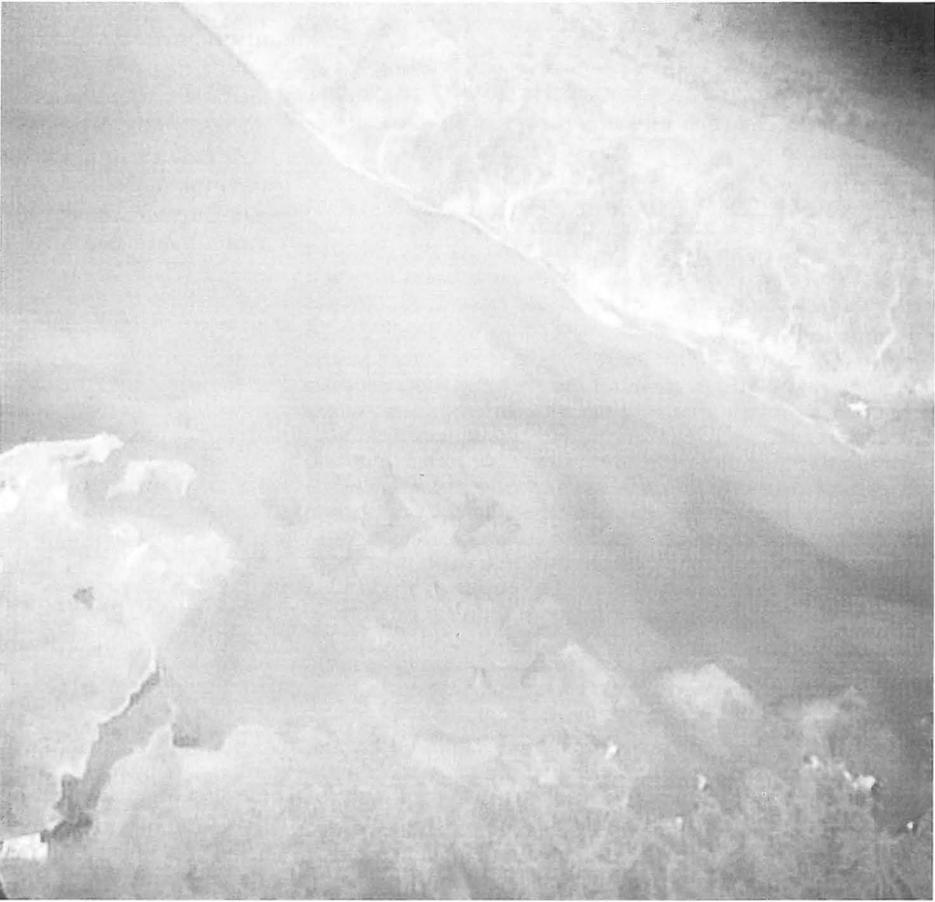


Fig. 5 *The Gulf of Kutch, Satellite image UIC-31-1018. Courtesy of Media Services Corporation, NASA/JSC, Houston.*

*way of reasoning as l'esprit de système* conveys the idea of a way of seeing things that a system of thinking implies.<sup>19</sup> If one wants to make an embayment appear as a strait, “a sense of order” is more suitable to the argument than the general sense of the expression. The writer’s third error in translating the singular masculine French noun *le continent* as the plural form *continents* is obvious enough. If the writer wants his readers to assume an embayment to be a strait running between two continents, then “le continent” rendered as “the continents” definitely serves his purpose. Gossellin’s *La presqu’isle occidentale de l’Inde* translated as the *the eastern peninsula of India* is an overt blunder. A scholar of South Asia making “eastern” out of the French adjective “occidentale” in a geographically important text is something that one cannot easily overlook. Thus there are four significant errors in a quotation barely containing three sentences.

The translator deliberately modifies what Gossellin says, particularly by substituting *continents* for *continent* and mistranslating *presqu’isle occidentale* as *eastern peninsula*. These emendations are not even acknowledged. The proper way would have been to present the anomalies as they appear in the text and draw the reader’s attention to them. But as this would have undermined the authenticity that the translator wanted to attribute to

M. d'Anville (1) a cru que cette énorme étendue, que les anciens donnoient à la Taprobane, ne provenoit que d'une fausse évaluation des stades employés à sa mesure. Nous ne pensons pas comme lui, et nous croyons pouvoir assigner une autre origine à cette erreur.

Les navigateurs qui partoient des bouches de l'Indus, avec le projet de parcourir les côtes de l'Inde, avoient à traverser les deux golfes qui resserrent la presqu'isle de Guzerat que l'on nommoit alors Larice. Ils trouvoient ensuite la côte de Malabar qui s'étendoit vers le midi, et il étoit impossible qu'ils se trompassent sur cette direction. Tous les renseignemens devoient donc annoncer qu'il existoit une grande terre au sud-est de Larice. Mais l'opinion qui faisoit tracer la côte de l'Inde presque parallèlement à l'équateur, persuadoit aux géographes d'Alexandrie que cette terre ne pouvoit point appartenir à l'Inde, qu'elle devoit en être séparée, et qu'elle ne pouvoit être que cette isle nommée Taprobane, dont ils avoient entendu parler. L'enfoncement du golfe de Cambaye, qui est au midi du Guzerat, a pu leur paroître le commencement du détroit qu'ils savoient devoir séparer la Taprobane de l'Inde. L'esprit de système leur a fait continuer ce détroit jusqu'au golfe de Gange, à travers le continent; et dès lors la presqu'isle occidentale de l'Inde, considérée comme une isle, a pu être confondue avec Ceilan, à laquelle on a donné toute l'étendue que devoit avoir cette portion de l'Asie.

Si l'on remarque en effet que la côte de Malabar, prise depuis le cap Comorin jusqu'à Surate, est de 7,500 stades de 500 au degré, on y reconnoitra la longueur précise que Ptolémée a donnée à la Taprobane. Le reste de la côte jusque vers Cambaye devoit disparaître dans son opinion, ainsi que dans celle d'Eratosthènes, pour faire place au prétendu détroit qu'ils y substituèrent.

Ce détroit est particulièrement indiqué dans Pline pour traverser la

publiée en 1752, et celle du major Rennell, publiée en 1788.

(1) Antiquité géographique de l'Inde,

pag. 148, PARIS, 1775. Éclaircissements géographiques sur la carte de l'Inde, pag.

109, PARIS, 1753.

Fig. 6 *The page 135 extracted from P.F.J. Gosselin's "Géographie des Grecs analysée; ou les systèmes d'Eratosthènes, de Strabon et de Ptolémée comparée entre eux et avec nos connaissances modernes". Paris, Didot l'Aîné, 1790.*

Gosselin, he amends the text to make it fit into his own interpretation. Are we to believe that the translator allowed himself these liberties because that is what he wanted to read in Gosselin's text? Or is it that he realized the inconsistency in the passage and wished to make it as comprehensible as possible by an arbitrary choice of terms, even at the expense of the original sense? Given these two possible reasons, we may ask what was Gosselin's western peninsula (which becomes the opposite in the translator's reading)? In other words, what was the eastern peninsula which juxtaposed with the western in Gosselin's terminology? To answer this, we have to focus on the passage immediately preceding the above quotation from the same paragraph of Gosselin's commentary on Ptolemy: *Les navigateurs qui partoient des bouches l'Indus, avec le projet de parcourir les côtes de l'Inde, avoient à traverser les deux golfes qui resserrent la presqu'isle de Guzerat que l'on nommoit alors Larice. Ils trouvoient ensuite la côte de Malabar qui s'étendoit vers le midi, et il étoit impossible qu'ils se trompassent sur cette direction*<sup>20</sup> (Fig. 6).

According to Gosselin, the navigators who left the mouths of the Indus to sail along the coasts of India had to cross the two gulfs which enclose the peninsula of Gujarat. What follows in this assumption is, as we have already seen in the passage cited by Gosselin's advo-

cate, that to these navigators the “deep” embayment must have appeared as a strait – similar to the one which separates the southeastern flank of the Indian coast from the north-western coast of Ceylon with a spit of sand banks, shoals and a few small islands located in between.<sup>21</sup> Did these navigators have to cross the Gulfs of Cutch and Cambay when sailing to or skirting India? Secondly, did the Gulf of Cambay appear to them as a very tempting short-cut taking them all the way across Deccan to the very mouths of the Ganges in a relatively short stretch of time compared with the rather lengthy route involved in circumnavigating cape Comorin and Ceylon? Thirdly, were they so blind and stupid as not to perceive that they were plunging headlong into a sailing course which was merely a chime-ra trapping their vessels in a cul-de-sac? Fourthly, did they confound both Deccan and Ceylon and make Taprobane grander than it should be because this famous “deep embayment” in the Gulf of Cambay gives way to a true strait dislocating Deccan from its passage? The gist of the argument of both Gossellin and his translator can be summarized in these questions, except for the latter’s use of the Indian cosmographic concept of “island-continent” which seems to demand an answer altogether different from that of Gossellin, if his vocabulary of orientation-finding is properly interpreted. It is here that we have to establish just which part of the Indian subcontinent Gossellin is qualifying as *la presqu’isle occidentale de l’Inde*. If the navigators were to orient their course in the “deep” embayment of the Gulf of Cambay towards the make-believe Palk Strait<sup>22</sup> to cross the Deccan, this western peninsula could only be the Peninsula of Gujarat, which is positioned thus in relation of them. If this is Gossellin’s supposition – in his particularly confusing commentary

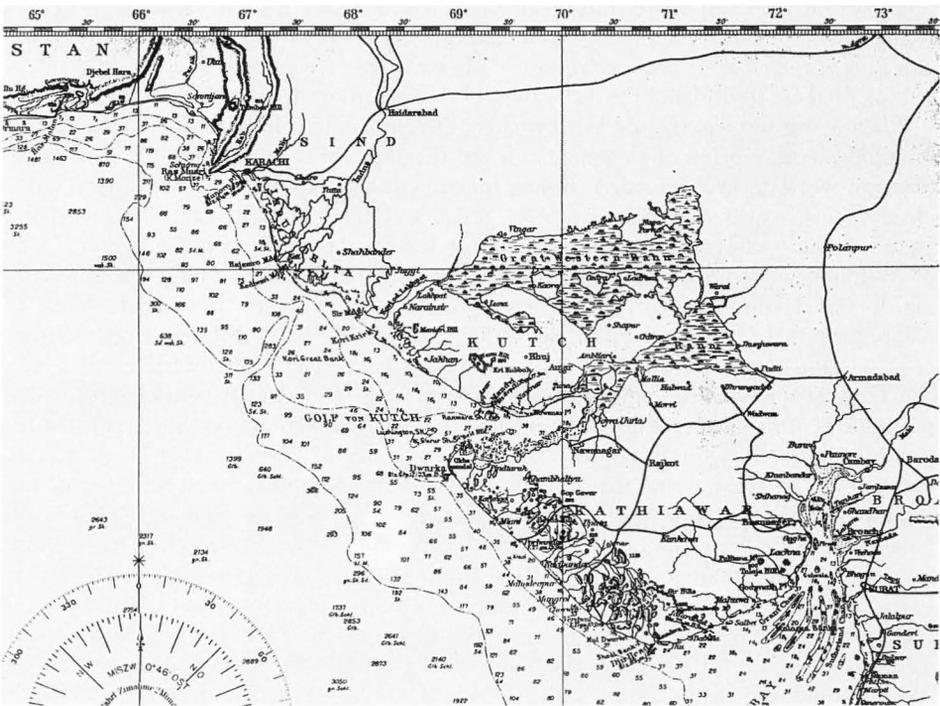


Fig. 7 The Great Western Rann and the Rann of Kutch with Kathiawar Peninsula and Gulf of Cambay. Detail from the “Indischer Ozean Arabisches Meer. Gwatar Bucht bis Dwarka”. Berlin, Reichs-Marine-Amt, 1907, Nr. 349 (Tit. IX Nr. 194).

on Ptolemy – and also because there are no other western peninsulae to be taken into consideration in the context of his commentary, it would be the Peninsula of Kathiawar that they mistook for “a great southern island” and merged with Ceylon, attributing to it the entire extent of space that this portion of Asia ought to have covered (Fig. 7).

This interpretation will almost without further consideration exclude “en bloc” the translator’s qualification, “eastern peninsula” for, from the location of Cambay, the portion of India south of the Deccan could only appear to them more as a southern peninsula than an eastern one. If the Deccan beyond the Vindhya Mountains (which run east-west) is what Gossellin really meant as *la presqu’isle occidentale de l’Inde* even though he called it thus erroneously and was later corrected by his commentator, then we will be considering the question of how the ancient navigators perceived this part of India from both eastwards and southwards of the Gulf of Cambay.

If we look at the depiction of India in Ptolemy’s “Tabula Asiae X” and follow Schwartzberg’s assumption, we would expect the Vindhya Mountains to appear on the bottom edge of the map where Ptolemy, supposedly believing in a Puranic notion of a *dvīpa*, took Dakṣiṇāpatha for a great southern island, truncated it with all its place-names along with their respective coordinates and fused it with the adjacent Taprobane without any recognition of the separateness of continental Deccan from that island. Instead, the Vindhya Mountains appear, though wide of the mark, roughly in the middle of the map of India, providing a general notion of the north-south and east-west configuration of the subcontinent. Although it presents a deformed and flattened long coastline running “due” east-west, all the topographical names specifically of Indian relevance are enumerated therein with indications plotting their respective latitude-longitude coordinates.<sup>23</sup> But then Schwartzberg says, *in any event, the surviving cosmographies indicate that dvīpas could be separated by mountain ranges as well as by intervening seas.*<sup>24</sup> However this argument will not hold good; he cannot attribute to Ptolemy the dislocation of the region south of the Vindhya Mountains.

Ptolemy was not a navigator. What we have therefore in his “India within the Ganges” is essentially a description of a country as it was then known to an astronomer cum mathematician working in Alexandria. Basing himself on geographical treatises, astronomical observations, works of previous writers, travel accounts, nautical manuals, and trading guides, the second-century mathematician lays down in his “Manual of Geography” a list of geographic coordinates meant for the visual reconstruction of the country he is describing. In the classification of regional descriptions, India occupies the “Tabula Asiae X” whose portrayal of the land within the Ganges is evidently much different from the usual configuration of the subcontinent. Ptolemy alone is held responsible for the form of India and Taprobane preserved in maps since Byzantine times. Now we turn our attention to the perceptions of navigators whose trading ventures brought them to the shores of India and Ceylon. Strabo, living in the reign of Augustus and in that of Tiberis in 21 A.D., over a century prior to Ptolemy, writes that since the traffic of the Alexandrian merchants whose vessels travel up the Nile and Arabian Gulf are already sailing as far as India, *these regions also have become far better known to us of to-day than to our predecessors.*<sup>25</sup> What is more, Strabo asserts that at any rate, he found as many as 120 ships sailing from Myos-Hormos to India, although previously hardly any skipper would venture on such expeditions and trade with India. Travelling with the prefect of Egypt, Aelius Gallus, whom he accompanied ascending the Nile as far as the frontiers of Ethiopia, the eminent geographer from Amasia could thus justly claim (“Geography”, II. v. 12.) that he had become much better acquainted with the India trade carried on by merchants and ship-owners from Alexandria, the city-port where Ptolemy was to live and write his future “Guide to Geography”.

Even though so many vessels were now engaged in India-bound sailing, Strabo casti-

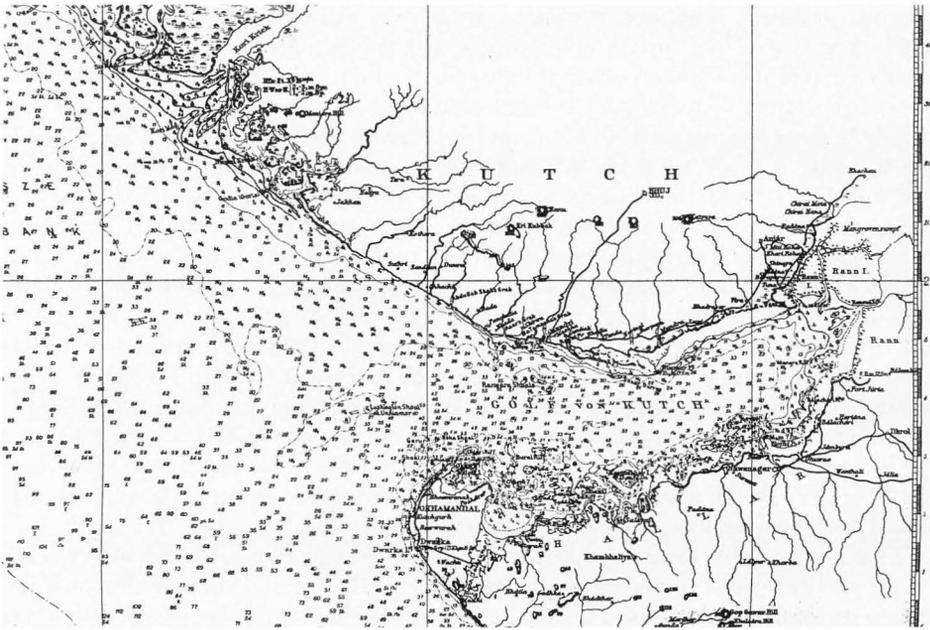


Fig. 8 The Gulf of Kutch, Detail from the "Indischer Ozean Arabisches Meer". Berlin, Reichs-Marine-Amt, 1907, Nr. 296 (Tit. IX Nr. 150).

gates the skippers of his day departing from Egypt to India for the scantiness of the information that a geographer such as himself can glean from them. Moreover, he laments that these sailors are too ignorant and incompetent to write accounts of the places that they visit, not corresponding to what a geographer like Strabo would earnestly expect from them. Nevertheless, he also does not fail to remark that among those merchants of his day who sailed from Egypt to India by way of the Nile and the Arabian Gulf there was seldom a sailor who undertook a voyage as far as the Ganges ("Geography", XV. iv.). This incidental remark implies that there were hardly any sailors who reached their Gangetic destination via the alleged Deccan Strait and that about 120 ships sailing to India inevitably ended up in the cul-de-sac of a "deep embayment" without knowing where they were landing; they were unable to tell anybody properly of the whereabouts of their sailing ventures because they were too unqualified to do so. Hundreds of these vessels must have carried thousands of passengers, both ignorant and erudite, but it is probably wrong to assume, as Gossellin and his translator want us to do, that these sea-going traders were too stupid to steer a course which made them enjoy an easy ride across a transcontinental sea-road without having any inkling for centuries of the countries that they were mistaking for one another (Fig. 8).

As Strabo observed, among those who sailed to India, there must have been traders solely interested in commercial gain, and less keen on gathering notions of the lie of countries which might be useful to geographers in Alexandria or elsewhere. However, to the detriment of the assumptions of Gossellin and his translator we do have the "Periplus Maris Erythraei", a unique Greek source whose remarkable details of the marine morphology of the Gulfs of Cutch and Cambay and of the geo-topography of river mouths, ports of the Indian seaboard, including the immediate hinterland, enable us to discard the assumption that the navigators consistently confused a gulf with a strait. What is more, Gossellin, who

cites this seafarer's handbook elsewhere in the same work where he ponders over the undue largeness of the surface of Taprobane and the disrupted configuration of India, simply ignored its relevance, which is indispensable for any serious discussion about the ancient geography of India and Ceylon. Ironically enough this is what Gossellin wrote: [...] *As Ptolemy does not provide the means to reestablish the first part of this coast, it would be impossible to decipher it without the aid of the Periplus of the Erythraean Sea erroneously attributed to Arrian. The author sailing down the coast gives the distance of places in navigational days. It is he who will guide us in the examination that we will undertake having given the first description that the Greeks appear to have had of these areas.*<sup>26</sup> Gossellin's commentator, too, seems to have turned a blind eye to the contributions (e.g. the map [a] entitled "Western Knowledge of and Trade with South Asia 1st–3rd Centuries, A.D." in Plate III. C. 5) that he edited, where not only the PME's relevance to the ancient geography of the region but also the presence of Peninsular India in Ptolemy's "India intragangem" or "India cis gangem" distinct from the island of Taprobane are alluded to more than once.<sup>27</sup> The next part of our study is concerned with the PME as a description of the Indian maritime landscape setting out from the mouths of the Indus and sailing along the Deccan up to the northwest passage between Ceylon and India, landmarks crucially linked with the formulation of the assumptions both of Gossellin and his translator.

What is remarkable for our purpose in this sailing-manual-cum-trade-directory intended for the merchants doing business with India, is the thoroughness with which this Greek-speaking merchant from Roman Egypt, who evidently sailed in person, imparts to others his knowledge of the Indian landscape covering the very area that Gossellin and his commentator claimed was grossly misunderstood by the ancient navigators or geographers. The occurrence of Indian place names, both coastal and hinterland with distances from one another, along with their itemized products to be bought by the visiting traders, are detailed in such a matter-of-fact style and with an insight which can only be inspired by an authentic mercantile interest. This drives home our argument, opposed to Gossellin, that the India trade carried on by the Graeco-Egyptians and Romans was inseparably associated with the knowledge of the country to whose folk they were bringing wares to sell and with whom they were doing business. Without the understanding of the terrain, as many as a hundred and twenty vessels (Strabo, II. v. 13) would not have the temerity to undertake expeditions to a country some thousands of miles away from their home ports, the distance over which a skipper carrying oriental goods might be called upon to sail from Myos Hormos to Barygaza being roughly 2820 nautical miles.<sup>28</sup> Let us follow what this navigator, writing the PME for the benefit of his fellow skippers, has to say while approaching the mouths of the Indus, which he calls Sinthos. With the addition of the typical Greek suffix -os, this is an attempt at transliterating the Sanskrit Sindhu.<sup>29</sup> It is significant that this Sinthos is the point of departure for Gossellin's ancient navigators who will be heading to the Gulf of Cambay cul-de-sac. Gossellin seemed convinced that he had mapped out an extraordinary solution to this issue when he wrote the following commentary on the Ptolemaic representation of India: *The navigators departing from the mouths of the Indus with the intention of sailing along the coasts of India had to cross the two gulfs which enclose the Gujarat Peninsula, which at that time they called Larice. Then they found the Malabar Coast spreading southwards, and it was impossible that they could have mistaken this direction. All information should have revealed that there existed a large [extent of] land to the south-east of Larice. However, the view which made them delineate the coast of India almost parallel to the equator persuaded the geographers of Alexandria that this land could certainly not have belonged to India, that it had to be separate, and that it could only have been the island called Taprobane, about which they had heard.*<sup>30</sup>

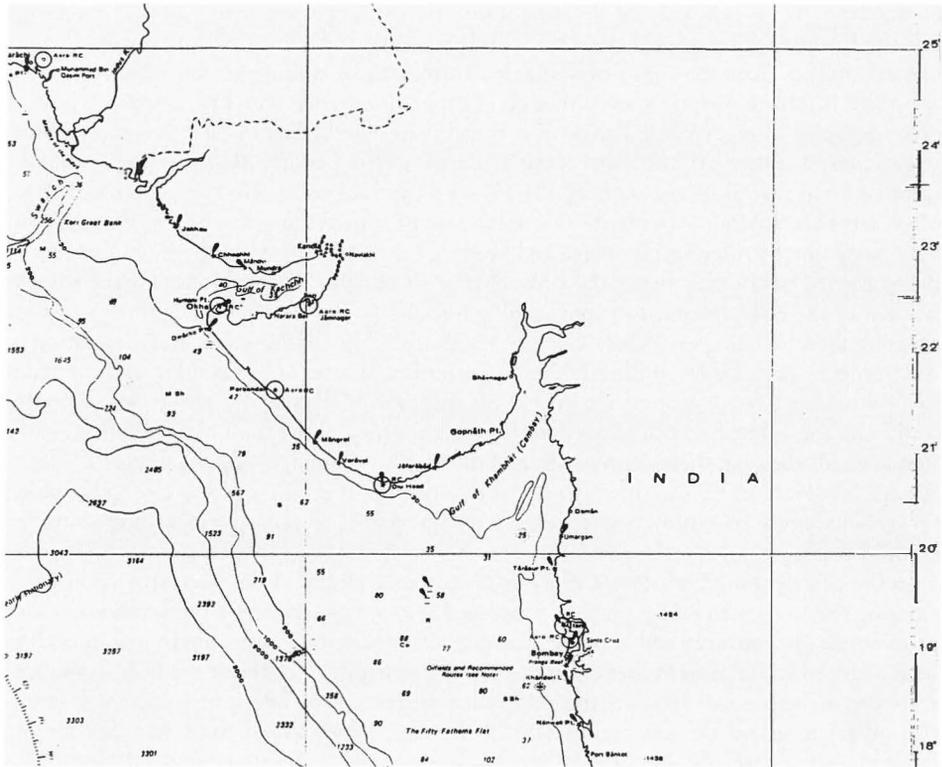


Fig. 9 West and Northwestern Coast of India. Detail from the “International chart of the Indian Ocean, Arabian Sea”. Hydrographer of the Navy. Taunton, 1986, Chart Series 4705.

What were the perceptions of the western seaboard of India by navigators whose views Gosselin thinks lend weight to his conjectures? The historical evidence at our disposal is meagre. We do however have the “Periplus Maris Erythraei”. The author of this work was both experienced and knowledgeable in coastal and open sailing across the ocean between the Red Sea and India. Although the geographical coverage he provides in his description devoted to trade with India spans from the mouths of the Indus to that of the Ganges and beyond, from a sailor’s vantage point he privileges himself as an eyewitness only for the sector of India’s western maritime coast. However, from a merchant’s point of view his guide book covers both sectors including the hinterland consisting of India’s eastern and western maritime board. The description of the “Periplus Maris Erythraei” that we follow, therefore, helps us navigate cautiously in the troubled waters of these assumptions and orient ourselves in a course we choose to sail along with Gosselin and see how this ancient navigator perceived the lie of the land of maritime India starting at the mouths of the Indus, the point of departure of Gosselin’s conjectures. A rough outline of the northwest segment of the Indian coast stretching from Karachi to Bombay appears on a modern map as two trumpet shaped embayments – the upper being smaller and the lower being greater – flanking a profile resembling a rhinoceros head which juts out into the open sea (Fig. 9).

On leaving the Indus, the navigator of the “Periplus” pilots us towards the Gulf called Barakê<sup>31</sup> which encloses seven islands in its bosom. Beyond the river Sinthus there is another gulf running in toward the north called Eiriron.<sup>32</sup> As the gulf cannot be easily seen,

he describes its morphology by dividing it into two principal segments, namely the Great and the Little, making us conscious both of their shoals and eddies violently extending far out into the sea from the shore and capable of wrecking or sinking vessels which unwarily approach it. His description, even though at times summarily sketched, imparts a hint of oceanography, thus revealing a sense of perception only to be had by an experienced sailor: *in both parts [of the gulf] the water is shallow, with shifting sandbanks occurring continually and a great way from the shore* (§ 40). He then cautions us to observe a species of large, black serpents floating about in the water as a sign of approaching this bay, so that the prudent navigator, by altering his course and keeping out to sea can avoid the imminent risk of being carried away, this being the only chance of escape. Not only are we sufficiently warned of the risks involved in approaching mindlessly the treacherous gulf – a pointless crossing thereby being excluded – but also the morphology of the shape and orientation of the trumpet-shaped inlet of the Arabian Sea is outlined, so as to be useful to another navigator who has a fair nation of the area at his disposal. Moreover, he also proceeds to describe the coastal feature of the overhanging promontory of the Gulf of Cutch that curves first towards the east, then southwards, and then to the west engulfing the islands within it. We are fortunate in having this eyewitness description of the first of the two gulfs which Gossellin wanted to assume was necessary for navigators to cross when sailing along the coast of India.

In the description that follows, one can see the amazement of the navigator upon experiencing the havoc caused by the tidal range and velocity generated by the southwest monsoon wind. He captures and recreates the effect this maritime atmosphere had upon him with a rare touch of elegant literary prose. On departing the mouths of the Indus, convinced of the uselessness of crossing the gulf, our navigator of the “Periplus” prudently counsels others to avoid this dangerous *Gulf of Barakê, which surges with vast and mighty billows, and where the sea, tossing in violent commotion, forms eddies and impetuous whirlpools in every direction. The bottom varies, presenting in places sudden shoals, in others being scabrous with jagged rocks, so that when in anchor grounds its cable it is either at once cut through, or soon broken by friction at the bottom* (§ 40).<sup>33</sup> The able sailor would possess the talent to utilize effectively something that might have been a banal weather forecast-like observation of a coastal pilot chart. Mistaking a gulf for a strait and thereby compounding countries situated apart is something far removed from what we can possibly conceive of. He thus not only ridicules but also repudiates Gossellin’s assumption which presumably obliges navigators to cross the first gulf. Contrary to Gossellin’s assumption of crossing the gulf, he warns us to shun it precisely because of its calamitous possibilities. We are now conducted by the “Periplus” towards the second gulf. Does the navigator who pilots us in the present course believe he has to cross this gulf which squeezes the Kathiawar Peninsula? This is the very gulf that Gossellin assumed must have appeared to early navigators as a strait extending all the way up to the Ganges.

As we are on the spot now, let us follow the navigator of the “Periplus” and see how he, while charting his course, perceives the situation of the gulf. First, the distance along the coast from Barbarikon<sup>34</sup> on the middle mouth of the Indus to the promontory of Papikê projecting into the gulf of Cambay opposite the Barygaza on the mainland is stated as 3000 stades<sup>35</sup> (§ 41). Then from the promontory of Papikê our navigator points out *another gulf* exposed to the violence of the waves and stretching beyond Papikê northward into the interior of the country thus forming a deep inlet withdrawn from the open sea. A great river, the Mais identified as the Mahi<sup>36</sup>, pours forth into this “other gulf” which contains an island called Baiônês [the modern Peram] at its mouth. At this point, without saying a word about sailing into the innermost part of the northern segment of the gulf which he

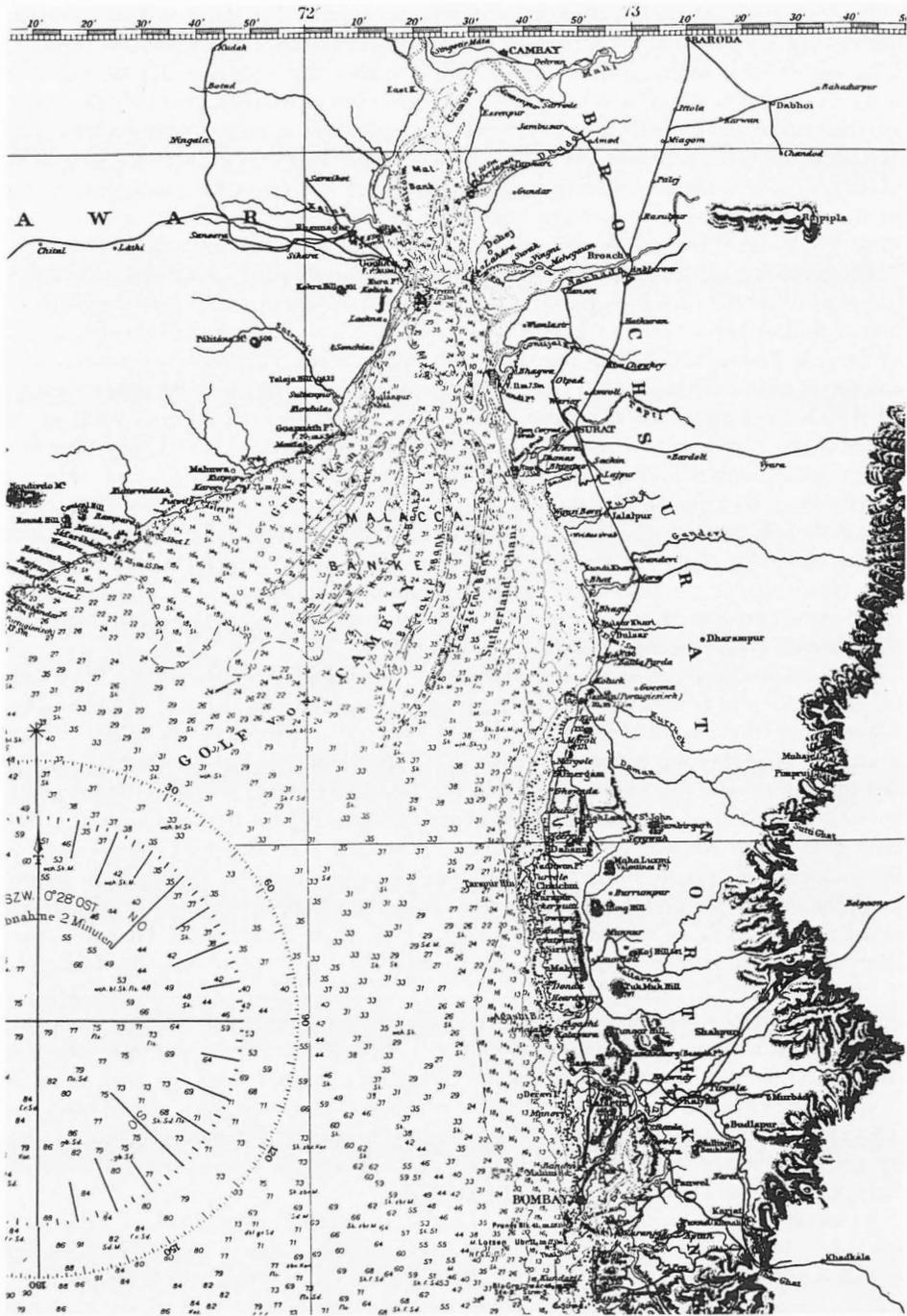


Fig. 10 The Gulf of Cambay with Broach (Barygaza) on the Narbada River. Detail from the "Indischer Ozean Westküste von Vorderindien, Dwarka bis Kap Comorin". Berlin, Reichs-Marine-Amt, 1909, Nr. 350 (Tit. IX Nr. 196).

calls *another gulf*, he specifically states that navigators leave this island of Baiônês on the left as they cross over from Astakapra<sup>37</sup> (near the promontory of Papikê) to Barygaza. What our sailor here perceives as *another gulf* is neither really separate nor even distinct from the Gulf of Cambay, which our author calls the Gulf of Barygaza, but only the northern segment of it. The distinction of the two segments in the same gulf does matter a great deal because it is the perception of a sailor at sea. This perception of the physical geography of the gulf does not leave any room for a strait imagined by an armchair geographer. So the navigators pass across this northern segment at its meeting point with the southern segment where, the “Periplus” skipper informs us, its width is about 300 stades (§ 42).

The gulf being narrowest at this point, the navigator clearly points out that it is necessary to leave behind the island on the left. This the navigator does until it is scarcely visible to him on the horizon in order to shape his course east and to sail straight into the very mouth of the river Narmadâ that leads the sailor to Barygaza town. This was the great centre of commerce of India in the author’s day. The river on the banks of which Barygaza is situated, which our author calls Lamnaios, is identifiable from the typical Greek suffix of *-os* added to the Hellenistic recasting of the Sanskrit term Narmadâ.<sup>38</sup> Let us remember that the navigator, with whom we embarked upon this guided tour, is not interested in sailing into the innermost northern segment of the Gulf of Cambay. Apparently it does not attract him, perhaps because there is nothing to buy or sell there or simply sailing to that place was uninteresting. Yet he knows the name of the river which this *other gulf* receives at its head. That concludes the northern segment. The assumption of an alleged strait in that direction is out of the question. He also knows that it suffices to sail to Barygaza where the merchandise from the entire region is available.

Barygaza interests him passionately. Hence the detailed description it entails. What concerns us here is to follow his interest in steering his vessel across the gulf. He knows the distance from the mouths of the Indus to the promontory of Papikê, this being the shortest stretch of the gulf crossing. He also knows the landmark of the island to find his bearings, and then to set upon the course and hit on the mouth of the river. Both the names of the emporium and the river bank on which the city is located (§ 44) are familiar to him. The term Barygaza is his way of transliterating the Sanskrit Bharukaccha<sup>39</sup>, the present day Bharoch near the mouth of the Narmada River. He is no stranger to these places. We can make the assumption that this navigator was a trader, or a skipper working for a shipowner based on the Red Sea who sent out his crew for business in distant India. He knows perfectly the approximate distance that he has to sail at various points of relaying. Taking the mouth of the river of Narmada (Fig. 10) as a strait leading to the mouths of the Ganges, a terminal diametrically opposed on the other side of the subcontinent, is mere conjecture. Of course, at the end of his *circumnavigation*, he describes in less precise terms the way leading to the river near Chrysê called *the Ganges, the greatest of all the rivers in India* (§ 63)<sup>40</sup> and beyond as being a long way off from the southernmost places on the mainland where he has been himself. Although from hearsay, he specifically indicates that it is only by conveyance over land via Bactria that Thina exports silk floss, yarn, and cloth to Barygaza (§ 64) and not by ship on an alleged strait.

However, in the part of his book where the itinerary leading in that direction is sketched, instead of northeast as it should be, he heads *east with the ocean on the right and sailing outside past the remaining parts to the left* (PME § 63) in order to reach the Gangetic terminal, conducting a sailor past Cape Comorin which he calls Komar. What the navigator of the “Periplus” himself knows, it would seem, ends there. Although he correctly conceives the southward slant of the western coast up to Cape Comorin, which forms the real extremity of the Peninsular India, he supposes it to retain this same direction well past Comorin

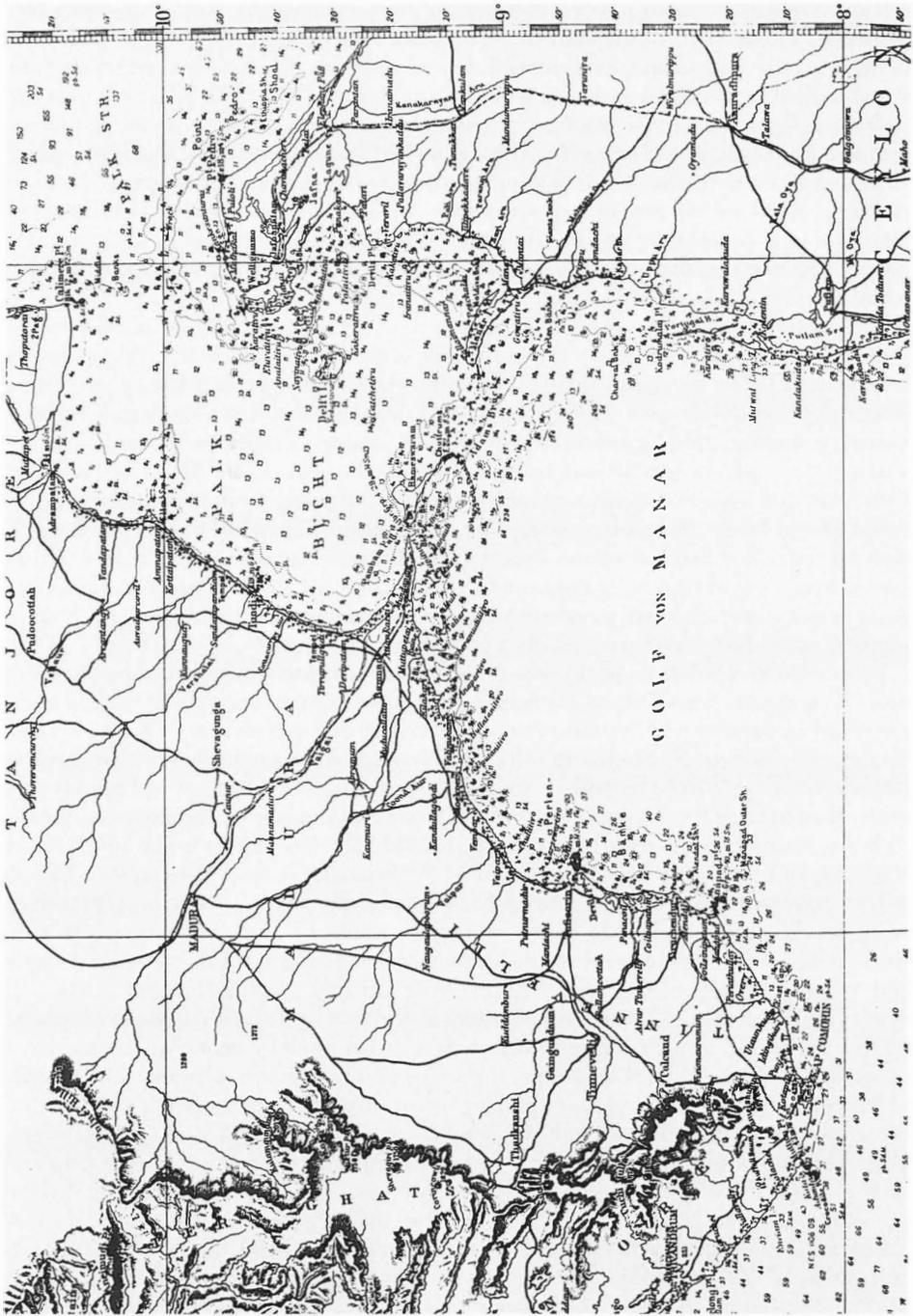


Fig. 11 Adam's Bridge separating the Gulf of Mannar from the Palk Bay and the Palk Strait. Detail from the "Indischer Ozean Vorder-Indien Maledivien bis Ceylon". Berlin, Reichsmarineamt, 1909, Nr. 351 (Tit. IX Nr. 198).

extending as far as Kolkhoi near Tutikorin on the Coromandel Coast. Prolonging still more the western coast considerably to the south, he does mention the fact that the Strand, bordering a bay with inland, a region named Argaru, comes after Kolkhoi and most of the vessels bound for southern ports continue on to this Strand (§ 51). This statement together with the designation *Aigialos*, used as if it was a place name, adds support to the conjecture that here was normally the termination of the run for Western vessels.<sup>41</sup> Clearly the author, having no access to firsthand information, does not give the distance in navigational days to enable us to locate the Strand unambiguously. He usually does provide such distances whenever he is knowledgeable in such matters. However, not once does the navigator give the slightest hint that this Strand might be a strait cutting short the journey to the far-flung mouths of the Ganges from Barygaza.

Although it is uncertain to what part of the coast his term *Aigialos* specifically refers, presumably the Strand designates the Indian side of the shore of the Gulf of Mannar at its head (Fig. 11). The curvature of this Gulf in its northern part is bounded by the Indian headland Dhanuskodi – which Ptolemy called *Kôry* regarding it as the most downward looking projection of India towards the south – and Mannar Island with its continuation of a string of islands and shoals that rise above the level of the ocean. This shallow sea of Palk's Bay that separates continental India from the insular Ceylon is, for our navigator, as removed and far-fetched as the assumption of Gossellin who wishfully confused a gulf with a strait, when they lie coastwise more than 2200 miles apart from one another (from Barygaza to Ceylon 1000 miles and from Ceylon to Ganges 1200–1250 miles).<sup>42</sup> Thus Gossellin's conjecture falls apart, leaving behind in this commentary the vestiges of the longest transcontinental strait ever imagined by a geographer.

Now we revert to the Gulf of Cambay which our navigator thus divided horizontally into two segments, the southern one running obliquely from the entrance of the gulf up to the island of Baionês near Papikê on the eastern shore of the Peninsula of Kathiawar and then running horizontally to the mouth of the Narmada River on the western shore of the mainland. This gulf has a breadth of about 300 stades and the navigators sail up this segment when heading for Barygaza, the greatest centre of commerce on the western seaboard of India, situated on the river Lamanaïos (§ 42). What he thus names is but a Hellenized rendering of Narmada which Ptolemy called the *Namadês* in his "Geography" (VII, 1. § 31).<sup>43</sup> As was the case with the first of the two gulfs, the Gulf of Cutch, his approach to understanding the morphology of the second, the Gulf of Cambay, is very similar to a modern pilot chart. The only difference here is that the hydrography, the velocity of winds and currents – in a word the entire maritime scene depicted – is all sufficiently verbalized, conveying in a nutshell all that one has to keep in mind when sailing these waters. What he observes with his own eyes graphically portrays what would essentially characterize a modern coastal pilot chart. Our skipper forewarns those navigators who approach the gulf of Barygaza from the ocean of the risks their vessels may encounter by being carried either to the right or to the left of the gulf. He emphasizes the narrowness of the passage which gives access to the gulf and recommends that they keep to the left passage shunning the one on the right at the very entrance to the gulf, for it is beset with rocks. Having indicated the safer course, he proceeds to alert them again about the dangerous narrow strip of shoal at the entrance to the gulf itself. He knows it by the name *Heronê* and locates it facing the village which he calls *Kammônî* on the mainland. Also he draws their attention to avoiding the *Papikê* promontory and the bad anchorage there. This is because of the violence of currents in the area and the sharpness of the rocks at the bottom of the sea which may cause damage to the cables, rendering the anchoring unsafe (§ 43).

All this may be necessary and helpful to a sailor who finds himself in the gulf waters. He

moves on to another crucial indication concerning the approach to the mouth of the river itself which leads to Barygaza. Barygaza, the coveted destination after all the hardships undertaken during this perilous and long journey now lies upstream about 300 stades away from the river mouth. He makes the pilots of the incoming ships conscious of the absence of a landmark or a coastal profile to identify the Barygaza land until they are upon it. He pinpoints thereby the difficult task the sailor encounters in making out the mouth of the river while still at sea. Again, even if safe passage to the mouth has been achieved, the journey is not over, for the mindful sailor has to watch out for the presence of the sand banks that hinder access (§ 43).<sup>44</sup> What immediately follows (§ 44) after this passage of instructions to amateur skippers, is a description of a piloting service which offers “on tow” manoeuvres for the incoming ponderous vessels with a view of obviating the above hardships and facilitating the navigation. A crew of local fishermen appointed for this special purpose is stationed at the very entrance to the gulf. Having at their disposal a fleet of well-equipped boats called *Trappaga* and *Kotymba*, these pilots go up the coast a long way as far as Syrastrênê in search of incoming vessels to conduct them safely to the stations already foreseen for this purpose. Taking advantage of the tide of the river this crew of pilots then tows the cumbersome vessels into suitable anchorages and into basins which are the deeper places in the river stretching as far as the emporium of Barygaza.<sup>45</sup> What he depicts here reminds us of harbour masters, pilot boats, berths, docks, quays, ferries and wharfs of the present-day facilities that the local port authorities provide for incoming foreign ships engaged in regular maritime affairs.

This crew of native fishermen offering their local know-how in manoeuvring foreign vessels in familiar waters is very much in keeping with the maritime practices of port cities. Our Greek-speaking navigator seems thoroughly knowledgeable about this pilot service and might have even availed himself of such facilities, for the way he speaks of these services inspires confidence. Even though our author seems an experienced longdistance skipper, for the sake of trade and profit he has no hesitation whatsoever in putting his faith into the hands of Indian fishermen in crossing the treacherous Gulf of Barygaza and in entering the river mouth. Notwithstanding the exhaustiveness of the instructions offered to his fellow sailors, the author goes so far as to describe the catastrophic nature of the high tide in the river about Barygaza in such vivid details, that it is regrettable if we do not quote § 46 at full length. It is the only instance in the entire book where the author displays an unprecedented literary skill revealing the intensity of his observation – both detached and intimate at the same time – : *This is the reason why ships frequenting this emporium are exposed, both in coming and going, to great risk [if handled by those who are unacquainted with the navigation of the gulf or visit it for the first time] since the impetuosity of anchors cannot hold against it. Large vessels, moreover, if caught in it are driven athwart from their course by the rapidity of the current till they are stranded on shoals and wrecked, while the smaller craft are capsized, and many that have taken refuge in the side channels, being left dry by the receding tide, turn over on one side, and, if not set erect on props, are filled upon the return of the tide with the very first head of the flood, and sunk. But at new moons, especially when they occur in conjunction with a night tide, the flood sets in with such extraordinary violence that on its beginning to advance, even though the sea be calm, its roar is heard by those living near the river’s mouth, sounding like the tumult of battle heard far off, and soon after the sea with its hissing waves bursts over the bare shoals.*<sup>46</sup>

Here is the example of a real navigator very much concerned with the phenomena associated with nature and the geography of a given place in a particular country of his interest. He beholds with amazement what happens in front of his eyes. The following is the counterpart of that example which illustrates the preoccupations of an armchair geographer



Fig. 12 *The Peninsular India and the Island of Ceylon with the Sea of Arabia in the foreground and the Gulf of Bengal in the background. Satellite image taken by Gemini 11 in September 1966 from an altitude of 800 km. Courtesy of Carl Zeiss, Oberkochen.*

resulting in an occasional outburst of absurdities: *The embayment of the Gulf of Cambay, which is to the south of Gujarat, could have appeared to them as the beginning of the strait which they knew should separate Taprobane from India. Their way of reasoning made them follow the strait up to the Gulf of the Ganges, across the continent.*<sup>47</sup> Need we say more to demonstrate that to our navigator the gulf did not appear at all as a beginning of an imaginary strait? Guided by local pilots, our author's reasoning does not make him steer his vessel in the *Gulf Strait short-cut* up to the Gulf of the Ganges, but to a safe berth in the Narmada river. Gossellin's *The western Peninsula of India*, instead of being considered as an island by an imaginary navigator, – that is the Greek speaking sailor from Roman Egypt, – very probably set out from Myos Hormos on the Red Sea and having sailed across the Arabian Sea and part of the Indian Ocean has this to say about the configuration of that part of India which he is visiting: *From Barugaza the coast immediately adjoining stretches from the north directly to the south, and the country is therefore called Dakhinabadēs, because Dakhan in the language of the natives signifies south (§ 50).*<sup>48</sup> As we shall see this Dakhinabadēs signifies much more than merely the Southern Land because its interpreta-

tion will enable the navigator not only to indicate the circumnavigability of India bounded by sea on the west and the east but also to delineate its peninsular form (Fig. 12).

The author of the “Periplus”, having pointed out to his fellow skippers the significance of the word for south in the language of the inhabitants, distinctly recognizes the configuration of the coast immediately beyond Barygaza running from north to south. The familiarity with the language of the country, even if this might have been superficial, is just the bit of perception needed to orient the course unambiguously southwards. Notwithstanding, having thus unhesitatingly set upon the southward course, he provides yet another remarkable degree of familiarity with the lie of the land beyond, towards the east, where there is no sign whatever of some dubious strait. Instead, he perceives the hinterland beyond the region of Barygaza as containing many barren lands, mountains, fauna and many populous nations stretching all the way across that part of Subcontinent up to the Ganges. Having given this valuable insight as to the interior, the navigator returns to the coast in order to enumerate the local ports of call that deserve the attention of his fellow sailors.

There again he reiterates the name of Dachinabadês, the region in which he situates two other trading centres, namely Paithana and the large city of Tagara that stands out most from the point of view of commerce. From Barygaza to Paithana the distance is given in twenty navigational days in the direction of the *south*. From Paithana the travelling distance is given as ten days to Tagara, located to the east of the former (§ 51). These directions of sailing or travelling are of major importance to our study, for they reveal the mode of perception of the navigator with regard to the localities and their bearings. We need not dwell upon the trading items that he lists, but we cannot afford to ignore the sweeping estimate of the total voyaging distance of 7000 stades which the author gives as far as Limyrikê, assuming a general direction from north to south. While listing three more local ports of Dachinabadês that lie in a row; namely, Akkabarû, Suppara and Kalliena, the navigator makes yet another valuable allusion to hindrances that the Greek ships encounter when they by chance sail into these ports, owing to improper activities of rival local groups vying with one another to wield power over trade carried out in these places.<sup>49</sup> Greek ships whose misfortunes led them to these places are conducted back to Barygaza under guard to berths under close surveillance. Barygaza too appears as a place to which the Greek vessels are brought under escort, but not as a place to which they sail headlong, assuming it to be a strait leading all the way to the Ganges across the Subcontinent. In this allusion to Greek ships, we may think of other skippers plying these coastal stretches just as in the case of the author of the “Periplus”.

How much Ptolemy too relied on the information such sailors brought back to Alexandria is shown in the following passage. It shows how Ptolemy makes use of such information to rectify the errors of Marinus the Tyrian geographer who situates Simylla<sup>50</sup>, a seaport and an emporium in India, further west not only than Cape Komari, but even than the river Indus: *But according to the unanimous testimony both of those who have sailed from us to those places and have for a long time frequented them, and also of those who have come from thence to us, Simylla, which by the people of the country is called Timoula, lies to the south of the river, and not also to west of them. From the same informants we have also learned other particulars regarding India and its different provinces, and its remote parts as far as the Golden Khersonese and onward thence to Kattigara. In sailing thither, the voyage, they said, towards east, and in returning towards the west, but at the same time they acknowledged that the period which was occupied in making these voyages was neither fixed nor regular* (Cap. 17. §§ 3, 4, 5).<sup>51</sup> Returning now to the skipper of the “Periplus” who might have been one among those innumerable sailors whose knowledge of India must

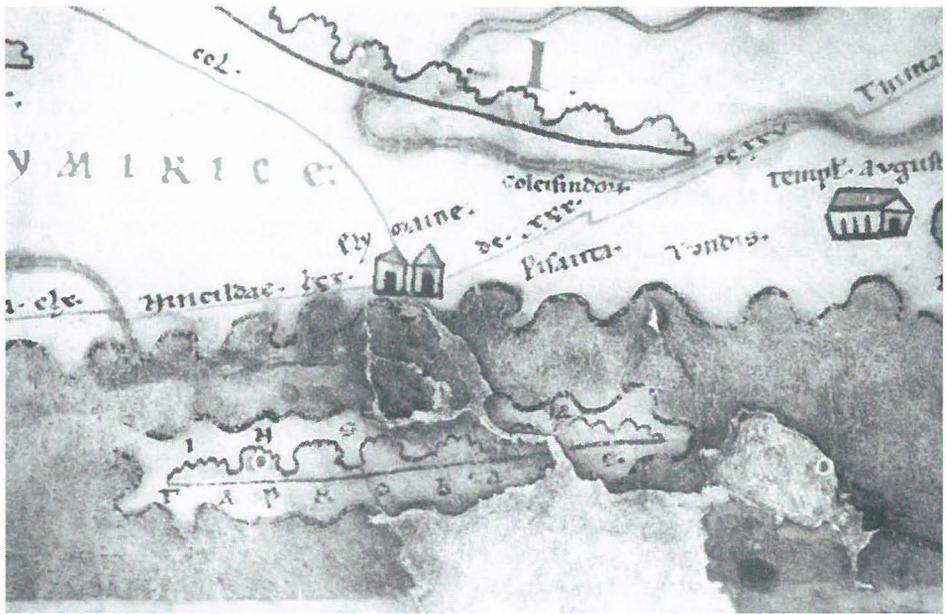
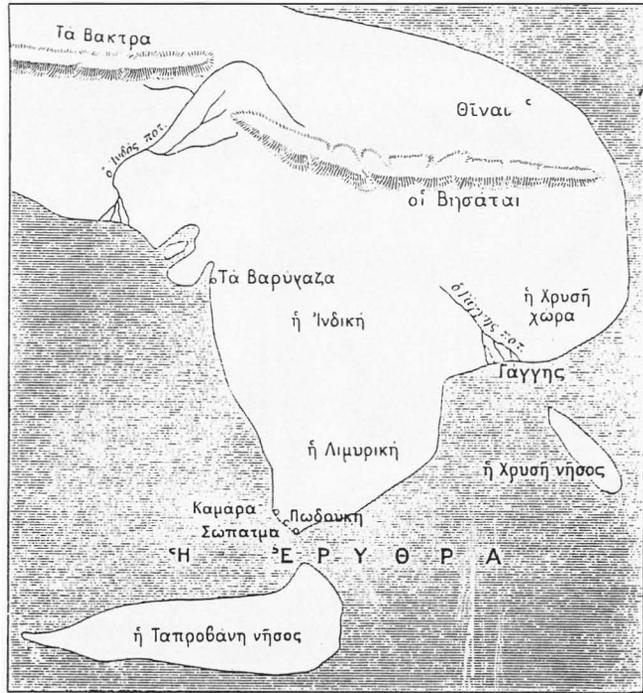


Fig. 13 Detail of the Peutinger table, the late-Roman itinerary map, segment XI. Courtesy of the Austrian National Library, Vienna.

have been put to service of a geographer like Ptolemy, we encounter yet another instance of the mention of Greek shipping at Muziris. Now known as the Cranganore<sup>52</sup> on the Malabar Coast, the ancient port of Muziris shared its distinction along with another key port, Nelkynda, about 500 stades away from the former, and partly owed its prosperity to Greek merchants from Roman Egypt whose *arriving there with gold and departing with pepper* was praised in a Tamil poem of the 2nd to 3rd century A.D.<sup>53</sup> Moreover there is at Muziris a temple dedicated to Augustus depicted on the section 5 of segment XI of the so-called “Tabula Peutingeriana”<sup>54</sup>, a Roman itinerary map of the 2nd century, in a copy dated to the 4th century, thus presupposing the presence of a significant colony of foreign traders, *a fact inherently probable wherever any large number of citizens of the Empire were gathered together*.<sup>55</sup> Such an important allusion to Greek shipping on the west coast of South India, corroborated further by the “Templum Augusti” on the “Peutinger Table” which also depicts the *insula Taprobane* off the continental *Lymyrica* corresponding to the Malabar Coast (Fig. 13), does not leave us with any doubt as to the perception these navigators had of the configuration of peninsular India.

The India trade of Roman Egypt reached such a height that sailors had to search for shorter routes to reach southern India ports leaving directly from Kanê or from the Promontory of Spices in Arabia and voyaging across the ocean under sails bypassing the treacherous gulfs. This is due, our skipper says, to the discovery of a new route over open water by a ship captain named Hippalos who, successfully plotting the location of the ports of trade and the configuration of the sea, blazed the trail to India (§ 57). Although formerly these navigators used to sail over in small vessels and skirt the curves of the aforementioned gulfs, the coastal sailing described by the skipper of the “Periplus”, they now hold out with the wind on the quarter for most of the way and reach Barygaza in only three days. Carried along by the same wind they improvise the rest of the run on their own pro-

Fig. 14 India and Taprobane according to the "Periplus of the Erythrean Sea" as reconstructed by George Coedès, in the "Textes d'auteurs grecs et latins relatifs à l'Extrême-Orient". Paris, É. Leroux, 1910, sketch-map entitled "l'Inde et l'Extrême-Orient d'après le Périples de la mer Erythrée".



per course and reach South Indian ports. Although Pliny does not attribute the discovery of this seasonal wind from the direction of the ocean to Hippalos, he does mention it as the native name of this west wind, thus buttressing the statement of our navigator's claim of a safer and quicker route to far-flung South Indian ports.<sup>56</sup>

Pliny too refers to the coastal route customarily followed for a long time in steering for the Indian harbour of Sigerus and in support of what the navigator of the "Periplus" claimed for the ship captain Hippalos, adds, *until a merchant discovered a shorter route, and the desire for gain brought India nearer; indeed, the voyage is made every year* (N.H. VI. xxvi. 101).<sup>57</sup> Now that the reliable knowledge of the whole of the voyage from Egypt is available for the first time, Pliny, thinking that it would not be amiss to set out the whole itinerary, is nonetheless appalled at the drain of wealth this new impetus given to India trade is causing to Rome: *It is an important subject in view of the fact that in no year does India absorb less than fifty million sesterces of our empire's wealth, sending back merchandise to be sold among us at a hundred times its prime cost* (N.H. VI. xxvi. 101).<sup>58</sup> If the Hippalos is blowing, Pliny continues, the most advantageous way of sailing to Muziris, the first port of trade in India, is to set out from Cella and it is a 40 days' voyage (N.H. VI. xxvi. 104).<sup>59</sup> Muziris is just the port on the Malabar Coast that our navigator described above as flourishing and to whose prosperity Greek shipping contributes.

Concurring with the navigator of the "Periplus", Pliny then sets forth all that concerns the India trade stating that *every year a fleet is despatched, carrying on board companies of archers, since the Indian seas are much infested by pirates. Nor will a description of the whole voyage from Egypt tire the reader, since now for the first time correct information regarding it has been made public* (N.H. VI. xxvi. 104). It is in vain that we look for evidence that these navigators, making voyages every year, were going astray in a gulf thinking that they were crossing the strait that separates the southeast flank of peninsular India from the

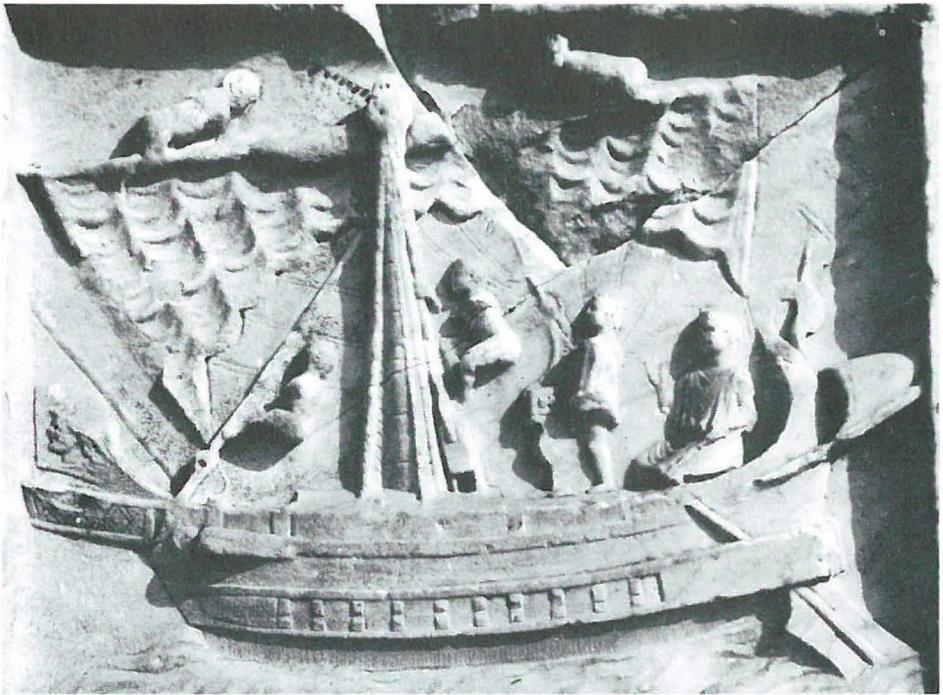


Fig. 15 Roman Merchant Ship, 1st Century A.D. Tomb of Naevoleia Tyche, Pompeii. (After Lionel Casson, *Ships and Seafaring in ancient times*, 1994)

neighbouring island of Taprobane. To this Taprobane our navigator will digress in a while, still heading on his southbound course, in order to deliver to us his valuable perceptions. Once this is done, we shall know how *this part of Asia* of Gosselin would have appeared to him: [...] *with the course by now turning off towards the east, there projects due west into the ocean an island now called Palaisimundu, but by its ancient [inhabitants Taprobanê [...]] It extends up to the part of Azania that lies opposite to it (§ 61).*<sup>60</sup>

The skipper's fairly detailed description and careful observations of the coastline of western India evidently give way only to hearsay with regard to his geographical perception of the island of Taprobanê which he designates by its newer name Palaisimoundou. Obviously not having sailed in person in these waters he deflects the orientation of the island lengthwise and thus overstretches it so far westward as almost to reach Azania on the eastern coast of Africa. This Azania that he mentions in paragraphs 15 and 16 as a country included within the personal experience of his sailing in the African routes has been connected with the Arabic writers' Zanj which forms the first element of Zanzibar (6°10' S, 39°11' E).<sup>61</sup> Ceylon, pear-shaped, broadening to the south, actually lies between 5°55' and 9°51' north latitude and the meridians 79°43' and 81°53' east longitude. Oriented north-south, its circumference is about 900 miles, resulting in a surface area of 25,481 square miles. Its real extreme length from north to south, from Point Palmyra to Dondra Head, is 270 miles; its greatest breadth, from Colombo on the west coast to Sangaman Kanda on the east is 140 miles. The sailing distances from Colombo to Zanzibar (N.E. Monsoon) and from Colombo to Djibouti are 2606 miles and 2217 miles respectively<sup>62</sup> whereas the greatest breadth of Ceylon is, as we have seen, not much more than 140 miles. However, carry-

ing the west coast of Ceylon a long way beyond its actual direction, the skipper conceives the island as a vaguely enormous land mass lying right across the Erythraean Sea, vast enough to adjoin the African continent which has very little to do with *this part of Asia* of Gossellin. By giving this excessive extension, the author is merely perpetuating the common extravagant misconceptions of the island's shape and position of his time for *we have strong assurance*, from Strabo who, making it to be no less than Britain (II. V. 32) states that *Taprobane is a large island in the open sea which lies off India to the south. It stretches lengthwise in the direction of Ethiopia for more than five thousand stadia, as they say* ("Geography", II. I. 14).

The navigator on the one hand and the geographer on the other do not stand alone, however, in making this stupendous mistake. For Pliny the Elder, the celebrated Roman encyclopaedist, while acknowledging the fact that the *age and achievements of Alexander the Great made it clear that it is an island*, recalls that *Taprobane, under the name of the 'Land of the Antichthones', was long regarded as another world* (N.H. VI. xxii. 24).<sup>63</sup> Here in this hindsight Pliny is at one with Pomponius Mela who manifests ambiguity as to whether he should consider Taprobane a large island or the commencement of another world.<sup>64</sup> Thus it appears from the time of the early accounts, that there was a tendency among Greek and Roman writers to exaggerate its dimensions greatly. As these exaggerations persisted long among them, it appears to have been the practice of the geographers of classical times to adopt these dimensions as actually established paradigms (Fig. 14).

#### Notes:

- 1 Pierre Meile: Les Yavanas dans l'Inde tamoule. In: *Mélanges Asiatiques, années 1940–1941*, p. 90.
- 2 There have been several translations of the PME. The earliest into English is "The Periplus of the Erythraean Sea. Part the Second. Containing an Account of the Navigation of the Ancients, from the Gulph of Elena, in the Red Sea, to the Island of Ceylon", tr., and ann., by William Vincent. London, T. Cadell and W. Davies, 1805, 405 pp.; J.W. McCrindale: *The Commerce and navigation of the Erythraean Sea*. (Reprint) Patna, Eastern Book House, 1987; B. Fabricius: *Der Periplus des Erythraischen Meeres von einem Unbekannten*. Leipzig, 1883; *The Periplus of the Erythraean Sea. Travel and trade in the Indian Ocean by a merchant of the first century; tr., and ann., by Wilfred Schoff*. New York, Longmans, Green, 1912, 323 pp.; *Le Périphe de la mer Erythréee suivi d'une étude sur la tradition et la langue*, by Hjalmar Frisk. Göteborg, Aktiebolag, 1927; *The Periplus of the Erythraean Sea by an unknown author with some Extracts from Agatharkides On the Erythraean Sea*, tr. and ed. by G.W.B. Huntingford, London, The Hakluyt Society, 1980, 225 pp. *The Periplus Maris Erythraei*, text with intro. and comm. by Lionel Casson, Princeton, N.J. Princeton University Press, 1989, 32 pp., is the up-to-date translation. This list, although incomplete, may prove useful to scholars who will find in these translations and editions different critical insights and commentaries complementing each other.
- 3 See M.P. Charlesworth: Some Notes on the Periplus Maris Erythraei. In: *Classical Quarterly*, 1928, pp. 92–100.
- 4 The name by which Sri Lanka was known in Antiquity and in the early Middle Ages. However, on the confusion caused by the attribution of this name to Sumatra, see Ananda Abeydeera: *Taprobane, Ceylan ou Sumatra? Une confusion féconde*. In: *Archipel* 47, 1994, pp. 87–123 and: *Encore Taprobane. A propos du témoignage tardif de Thomas Porcacchi (1576)*. In: *Archipel* 49, 1995, pp. 125–136.
- 5 See Joseph Fischer and Franchi de' Cavalieri: *Claudii Ptolemaei Geographiae Codex Urbinas Graecus* 82. Leiden-Leipzig, 1932, I–IV, and for the only available English language translation see Edward Luther Stevenson: *Geography of Claudius Ptolemy [...]* based upon Greek and Latin manuscripts and important late fifteenth and early sixteenth century printed editions, including reproductions of the maps from the Ebner manuscript, ca. 1460. New York, New York Public Library, 1932.
- 6 J.O. Thompson: *History of Ancient Geography*. Cambridge, University Press, 1948, pp. 303, 306, 342.
- 7 Joseph E. Schwartzberg: *Cosmographical Mapping*. In: *The History of Cartography*. Vol. II, Book one: *Cartography in the Traditional Islamic and South Asian Societies*. J.B. Harley and D. Woodward, ed. Chicago and London, University of Chicago Press, 1992, p. 340.
- 8 *Ibid.*
- 9 *Die Kosmographie der Inder*. Leipzig, 1920, p. 224. (Reprint edition of 1967 by Georg Olms at Hildesheim).

- 10 T.W. Rhys Davids and J. Estline Carpenter (ed.): Sumangala-Vilasini, Buddhagosā's Commentary on the Dīghanikāya.
- 11 V. Venkatachellān Iyer: The Seven Dwīpas of the Purānas. In: Quarterly of Indian Myths, XV, 1924–1925, pp. 62–75, 119–127, 238–245; XVI, 1925–1926, pp. 116–124, 268–283; XVII, 1926–1927, pp. 30–45.
- 12 See Manabendu Banerjee: Stone Pillar Inscription of Samudragupta. In: Historical and Social Interpretations of the Gupta Inscriptions. Calcutta, Sanskrit Pustak Bhandar, s.d., p. 35.
- 13 *Originally Uttarāpatha, as indicated by its name, was a great trade-route which gave its name to the country through which it passed*, Ajay Mitra Shastri: India as Seen in the Vrhatsamhitā of Varāhamihira. Delhi, Patna, Varanasi, Motilal Banarsidass, 1969, pp. 47–48.
- 14 See J.F. Fleet: The Topographical List of the Brihat-Samhita. In: The Indian Antiquary, Vol. XXII, July 1893, pp. 169–195.
- 15 Delhi, Patna, Varanasi, Motilal Banarsidass, 1968, 304 pp. See also his: Studies in the Geography of Ancient and Medieval India (second edition, revised and enlarged). Delhi, Benares, Patna, Motilal Banarsidass, 1971, 401 pp.
- 16 La cartografia antica dell'India, op. cit.
- 17 Die Kosmographie der Inder, op. cit. See also S.M. Ali: The Geography of the Purānas. New Delhi, People's Publishing House, 1966, 234 pp.
- 18 Joseph E. Schwartzberg: art. cit., p. 340.
- 19 *Disposition intellectuelle dominante déterminant l'orientation de l'intelligence lorsqu'elle s'applique à un objet*, Trésor de la langue française Dictionnaire de la langue du XIXe et XXe siècle (1789–1960). Paris, Editions du CNRS, 1980, tome VIII, s.v. Esprit, p. 149.
- 20 P.F.J. Gossellin: Géographie des Grecs analysée; ou les systèmes d'Eratosthènes, de Strabon et de Ptolémée comparée entre eux et avec nos connaissances modernes. Paris, Didot l'Aîné, 1790, p. 135.
- 21 See C.W. Nicholas: The North-West passage between Ceylon and India. In: S. Bandaranayake et al. (ed.): Sri Lanka and the Silk Road of the Sea. Colombo, National Commission for Unesco, 1990, pp. 271–275.
- 22 Named Palk Straits, after Robert Palk, Governor of Madras (1763–1767) during whose term of office William Stevens of Madras Engineers was deputed in 1765 to search for a navigable channel through Adam's Bridge and Palk Strait. See R.H. Phillimore: Historical Records of the Survey of India. Dehra Dun, The Geodetic Branch, Survey of India, p. 385.
- 23 See Louis Renou: La Géographie de Ptolémée L'Inde (VII, 1–4). Paris, Édouard Champion, 1925, pp. 1–42.
- 24 Joseph E. Schwartzberg: art. cit., p. 340.
- 25 The Geography of Strabo, trans. by Horace Leonard Jones. London, William Heinemann, 1917, vol. I, pp. 454–455, The Loeb Classical Library edition.
- 26 [...] *Ptolémée ne donnant pas les moyens pour rétablir cette première partie de la côte, il seroit impossible de la débrouiller aujourd'hui sans le secours du Periple de la mer Erythrée, faussement attribué à Arrien. L'auteur, en parcourant cette côte, donne la distance des lieux en journées de navigation. C'est lui qui nous guidera dans l'examen que nous en ferons, après avoir rapporté la première description que les Grecs nous paroissent avoir eue de ces parages*, P.F.J. Gossellin: Recherches sur la Géographie systématique et positive des Anciens; pour servir de base à l'histoire de la géographie ancienne. Paris, Imprimerie impériale, 1813, Vol. III, p. 170.
- 27 His own footnote: 40. Joseph E. Schwartzberg, ed., A Historical Atlas of South Asia (Chicago: University of Chicago Press, 1978), presents a set of maps (pp. 13, 14, and 27, plus relevant text on 162–65 and 182–83) that convey some sense of the extensiveness of historical geographic detail to be gleaned from the Vedas, the Epics, and the Purānas [...], J.B. Harley and D. Woodward, ed.: op. cit., p. 340. "A Historical Atlas of South Asia" is reprinted in 1992 by the Oxford University Press.
- 28 Eric H. Warmington: The Commerce between the Roman Empire and India. London, Curzon Press, 1928, p. 73. See also Lionel Casson: Rome's Trade with the East: The Sea Voyages to Africa and India. In: Ancient Trade and Society. Detroit, Wayne State University Press, 1984, p. 190.
- 29 The name occurs in "The Brhatsamhitā of Varāhamihira" (XVI. 10. 15), see Mitra: op. cit., p. 62.
- 30 P.F.J. Gossellin: Géographie des Grecs analysée [...], op. cit., p. 135.
- 31 The term subsists in the name Dwarka the town (22°15' N. 68°58' E) supposedly situated just below the southern entrance to the Gulf of Cutch (PME, Casson's translation, p. 196). For the discovery of the submerged city of Dvaraka, see S.R. Rao: Marine Archaeology and Shipwrecks, p. 12, in the paper presented to the International Seminar on Trade Contacts of India with the Western and the Eastern Countries of the World, held at Madras on 20–21 December, 1990. Unpublished.
- 32 The term subsists in the modern "Rann" of Cutch. *This name applied to the singular extent of sand-flat and salt-waste, often covered by high tides, or by land-floods, which extends between the Peninsula of Cutch and the mainland, is a corruption of the Skt. irina or irina, a salt-swamp, a desert, [or*

aranya, a wilderness]. *The Runn is first mentioned in the Periplus in which a true indication is given of this tract and its dangers*, H. Yule and A.C. Burnell: *Hobson-Jobson A Glossary of Colloquial Anglo-Indian Words and Phrases*. London, Routledge and Kegan Paul, 1968, p. 774, s.v. Runn (of Cutch).

- 33 McCrindale's translation; op. cit., p. 111–2.
- 34 The corresponding Sanskrit term *Barbara* occurs in: *The Brhatsamhitā of Varāhamihira* (XIV. 18); see Mitra: op. cit., pp. 71–72.
- 35 *The distance is actually 4500 stades (450 nautical miles)*; PME, Casson's translation, p. 200.
- 36 The name occurs in "The Brhatsamhitā of Varāhamihira" (XVI. 31); see Mitra: op. cit., p. 59.
- 37 Identified by Henry Yule as Hastakavapra, now called Hathab in Bhaunagar territory: Hastakavapra-Astakapra. In: *The Indian Antiquary*, November, 1876, Vol. V, p. 314; G. Bühler: *An Additional Note on Hastakavapra-Astakampron*. In: *The Indian Antiquary*, February, 1878, Vol. VII, pp. 53–54.
- 38 The name occurs in "The Brhatsamhitā of Varāhamihira" (XVI. 1, 9); see Mitra: op. cit., p. 60.
- 39 The name occurs in "The Brhatsamhitā of Varāhamihira" (XVI. 6; LXVIII. 11), *ibid.*, p. 108.
- 40 Casson's translation, p. 91.
- 41 See *ibid.*, p. 214.
- 42 Eric H. Warmington: op. cit., p. 73; According to Bimala Churn Law *The surf-beaten coast [of India] extends over nearly 3,000 miles*, *Historical Geography of Ancient India*, op. cit., p. 15; According to McCrindale *The distance from the mouth of that river [Brahmaputra] to Cape Comorin is in a straight line about 1300 miles, and from that cape to the mouth of the Indus at Karachi about 1250 miles (English)*, *Ancient India As Described in Classical Literature*. Westminster, Archibald Constable, 1901, p. 107, n. 1.
- 43 See Louis Renou: op. cit., p. 17.
- 44 McCrindale's translation, op. cit., p. 117.
- 45 *Ibid.*, p. 128. As a matter of fact, Barygaza is mentioned in 19 of the 66 chapters, thus revealing its importance as the leading port of foreign trade.
- 46 *Ibid.*, pp. 119–120. The Roman characters are mine.
- 47 P.F.J. Gosselin: *Géographie des Grecs analysée [...]*, op. cit., p. 135.
- 48 McCrindale's translation, p. 124.
- 49 See Lionel Casson: *Sakas Versus Andhras in the Periplus Maris Erythraei*. In: *Ancient Trade and Society*, op. cit., pp. 211–224.
- 50 For its identification with the modern Marāthi name Chenwal see the review by S.: *Notes on the History and Antiquities of Chaul and Bassein* by J. Gerson da Cunha. In: *The Indian Antiquary*, Part LXXXII (Vol. VII), July, 1878, p. 183.
- 51 McCrindale: *Ancient India as Described by Ptolemy*, op. cit., pp. 28–29.
- 52 See H. Yule and A.C. Burnell: op. cit., s.v. Cranganore, pp. 272–273.
- 53 See note 1.
- 54 See Konrad Miller: *Die Peutingersche Tafel*. Stuttgart, F.A. Brockhaus, 1962, segm. XII–5; Annalina and Mario Levi: *La "Tabula Peutingeriana"*. Bologna, Editioni Edison, s.d., segm. XII–5; *Tabula Peutingeriana. Codex Vindobonensis 324. Vollständige Faksimile-Ausgabe im Originalformat*. Graz, Akademische Druck- und Verlagsanstalt, 1976, segm. XII–5.
- 55 M.P. Charlesworth: *Trade-Routes and Commerce of the Roman Empire*. Cambridge, Cambridge University Press, 1924, p. 70.
- 56 See J. Innes Miller: *The Spice Trade of the Roman Empire 29 B.C. to A.D. 641*. Oxford, The Clarendon Press, 1969, pp. 141–143 and also P.J. Thomas: *Roman Trade Centres on the Malabar Coast*. In: *Indian Geographical Journal*, Vol. VI, 1931, pp. 230–240.
- 57 Pliny: *Natural History*. London, W. Heinemann, 1969, Loeb Classical Library translation by H. Rackham, p. 415.
- 58 *Ibid.*, p. 417.
- 59 *Ibid.*, p. 419.
- 60 Casson's translation, p. 89.
- 61 See *ibid.*, p. 136.
- 62 George Goddard (ed.): *The Mercantile Marine Atlas. Specially designed for Merchant Shippers, Exporters and Ocean Travellers*. London, George Philip, 1952 (14th edition), Arabian Sea 21.
- 63 McCrindale: *Ancient India As Described in Classical Literature*, op. cit., p. 102.
- 64 *De situ orbis*, 3, 7.

## Die tatsachenorientierte Beschreibung eines Seeweges nach Indien und Ceylon von einem griechischen Handelsschiffskapitän aus dem römischen Ägypten

### Zusammenfassung

Für die Versorgung der mittelmeerischen Welt mit den begehrten Schätzen des Fernen Ostens war bereits in der Antike eine funktionierende regelmäßige Schifffahrt nach Indien und Ceylon vorhanden. Trotz dieser Verbindungen herrschten aber auch bei den führenden Köpfen der damaligen Geographie wie z.B. Strabon (64 v.Chr. – 21 n.Chr.) und Ptolemaios (ca. 100–170 n.Chr.), die beide auf jede Möglichkeit zur Kenntniserweiterung, etwa durch Befragung von Reisenden, zurückgriffen, weit von der Wirklichkeit abweichende Vorstellungen über Gestalt, Ausdehnung und geographische Lage Indiens. Aus fast derselben Zeit, nämlich der zweiten Hälfte des ersten nachchristlichen Jahrhunderts, ist nun aber eine Segelanweisung für griechisch-römische Navigatoren erhalten, die recht genaue Kursvorschriften enthält und weitere Einzelheiten über den indischen Subkontinent mitteilt, soweit es für den Seefahrer und Kaufmann interessant war: Es handelt sich um den sogenannten »Periplus Maris Erythraei«, die »Segelvorschrift für das Erythraische Meer (= den Indischen Ozean)«.

Um das Problem zu verdeutlichen: Ptolemaios beschreibt Indien unter erheblicher Verkürzung der Nord-Süd-Erstreckung, gibt aber andererseits Ceylon (Sri Lanka), das damals Taprobane genannt wurde, kontinentgroße Abmessungen bis weit über den Äquator nach Süden. Diesem klassischen geographischen Konzept steht im »Periplus« eine tatsachenorientierte Beschreibung von Seerouten antiker Handelsschifffahrt und Navigation im Indischen Ozean gegenüber. Die Gründe für die großen Unterschiede zwischen der »Geographie« des Ptolemaios und dem »Periplus« liegen vor allem in Absicht und Methode: Ptolemaios, der Astronom, betont die Koordinaten der Länder und Orte, die er berechnet hat; der anonyme Autor des »Periplus« hat die sichere Navigation zum Ziel und gibt infolgedessen vor allem solche Details an, die für den Seefahrer höchst wichtig sind.

Ein verblüffender Fall betrifft den Golf von Cambay, von wo aus angeblich ein kanalartiger Durchlaß bis zur Gangesmündung verläuft, eine Auffassung, die noch in der neuesten Darstellung der antiken Geographie in die Irre führt. Diese Auffassung beruht aber auf einer mißverstandenen Übersetzung des Franzosen Gosselin Ende des 18. Jahrhunderts. Im »Periplus« gibt es einen solchen Kanal selbstverständlich nicht.

Im Gegenteil: Die antike Segelanweisung beschreibt die Route nach Indien genau, mit detaillierten Hinweisen auf Kurse, gefährliche Küsten, Untiefen, Strömungen usw., und schließlich auch auf gute Ankerplätze und Häfen mit großem Warenumschlag, mit all dem also, was wir in einer guten klassischen Segelanweisung erwarten. Man darf mit Sicherheit davon ausgehen, daß der Autor diese Route selbst befahren hat, zumindest bis zum Kap Comorin. Es muß im griechisch-römischen Umkreis Tausende von Seeleuten gegeben haben, die über ähnliche Erfahrungen verfügten, denn der Handel Roms mit Indien war gewaltig. Plinius der Ältere (23/24–79 n.Chr.) schreibt in seiner »Naturalis Historia«, daß Indien jährlich mindestens 50 Millionen Sesterzen aus dem römischen Reichtum erhalte, für die es Handelswaren schicke, die wiederum zum hundertfachen Preis in Rom verkauft werden. Kurz nach der Abfassung des »Periplus Maris Erythraei«, der eine küstennahe und dadurch lange Route beschreibt, wird der Seeweg direkt quer über den Indik erschlossen, für die römischen Schiffe eine erhebliche Verminderung der Fahrtdauer und dadurch der Transportkosten.