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Works by J. W. McCRINDLE, M.A., M.R.A.S., Late Principal of the Government College, Patna, and Fellow of the University of Calculta.

ANCIENT INDIA

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In rendering the results of Dr. Schwanbeck's industry accessible to English readers by this translation of the collected fragments of the lost *Indeka* of Megasthenes, perbaps the most trustworthy of the Greek writers on India, Mr. McCrindle would have performed a most valuable service even had he not enriched the original by the addition of copious critical notes, and a translation of Arrian's work on the same subject.—*Calcutta Review*.

Mr J. W. McCrindle, of Patna, has given us a readable translation both of Schwanbeck's Megasthenês, and of the first part of Arrian's *Indika*. Mr. McCrindle descrees the thanks of all who take an interest in Ancient India, and, should he be able to fulfil his promise to translate "the entire series of classical works relating to India," he will give an impetus to the study of the early civilization of this country among native as well as European scholars. His work is well printed, and, as far as we have been able to judge, carefully edited. —*The Madras Times*.

Mr. McCrindle, who has already published a portion of the translation of Arrian, reprints these valuable contributions to our scanty knowledge of Ancient India. An introduction and notes ald value to the translation, a value which happens to be very great in this case, and to centre in one long note on the identification of the old Palibothra or Pataliputra with the modern Patna.—The Daily Review.

Mr. McOrindle, who holds a very high position in the Education Department of the Indian Government, has collected into a volume some "translations which he has lately contributed to the "Indian Antiquary" from Megastheness and Arrian. . . . Strabo and Pliny thought fit to condemn the writings of Megastheness as absolutely false

FOR CONSULTATION ONLY

ANCIENT INDIA

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AS DESCRIBED BY

PTOLEMY;

BEING

A TRANSLATION OF THE CHAPTERS WHICH DESCRIBE INDIA AND CENTRAL AND EASTERN ASIA IN THE TREATISE ON DECORAPHY WRITTEN BY KLAUDIOS PTOLEMAIOS, THE GELEBRATED ASTRONOMER,

WITH

INTRODUCTION, COMMENTARY, MAP OF INDIA ACCORDING TO PTOLEMY, AND A VERY COPIOUS INDEX,

EY J. W. MCCRINDLE, M.A., M.R.A.S.,

YORMHALY FRENCIPAL OF THE SAME AND THE SAME

Reprinted from the " Indian Antiquary," 1884.

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and incredible, although they were glad to copy into their own works much that he had written. We moderns, however, with our longer expérience of travellers' tales, and of the vitality of fabulous statements, and practised in comparing accounts that vary, find much in these fragments that agrees with what we can reasonably conjecture of the past of India. We may observe that many of the singularities of the human race, which are depicted on the famous Mappemonde, at Hereford, are described by Megasthends. Mr. McCrindle's volume ends with an excellent translation of the first part of Arrian's Indika. He is to be congratulated on having made a very useful contribution to the popular study of Indian antiquities.--Westminster Review.

A good notion of the extent of the knowledge respecting India possessed by the old Greeks and Romans may be formed from the translation of the writings on the subject of Megasthenes and Arrian, presented by Mr. McCrindle, under the title of Ancient India. Many of the statements made by the old writers are unmixed fable, although Megasthenes, there can be no doubt, travelled as far as Bengal, but on the whole, as much accurate knowledge was possessed by the Romans in the first century after Christ, as by the European nations in the lette century. An introduction, notes, and map of India add to the practical utility of Mr. McCrindle's work.—Scoisman.

Both of these ancient works are very interesting as illustrating the knowledge possessed by the later Greeks and the Bomans respecting the geography of India and the neighbouring regions. Mr. McCriadia's prefaces, each with an informatory introduction, embody the results of the most recent investigations of modern scholarship on the subjects to which they relate.—Scolsman.

Mr. J. W. McCrindle, Principal of the Government College, Patna, has set himself the task of publishing, from time to time, translations of the Greek and Latin works which relate to Arcient India, and in pursuance of this intention, some time since he published a work entitled Ancient India as described by Megasther thand Arrian. A second instalment has now appeared under the title of The Commerce and Navigation of the Erythreean Sea; being a translation of the Perialus Maris Erythraei, by an anonymous writer, and of Acriane. account of the Voyage of Nearkhos, from the mouths of the Indus to the head of the Persian Gulf, with introduction commentary, notes, and index. The introduction and commentary enroady the main substance of Muller's prolegomena and notes to the Periplas and of Vincent's Commerce and Navigation of the Ancients, so far as it relates specially to the work. The identification of places on the Malabar and Coromandel Coasts is derived from Bishop Caldwell's Dravidian mar. Other recent works have been resorted to for verification



and correction of the contents of the narrative. To those students who have neither the learned work of Dr. Vincent, nor the *Geographi Gracci Minores* of C. Müller, within reach, this handy volume will prove very serviceable.—*The Academy*.

The careful and scholarly translations of ancient texts relating to India, which Mr. McCrindle is preparing in serial order, promises to be of great value. The method which he follows is in accordance with the best traditions of English scholarship As to the historical importance of these texts there can be only one opinion. History in Sanskrit literature is conspicuous by its absence, so that external authorities are at once the only ones available, and at least redeem by their unbiassed character their relatively deficient opportunities of information. Those who are best acquainted with the difficulties of English rule in India, are best aware that the problems of Indian administration are, in fact, problems of Indian history. . . . It is thus of vital importance that every possible hint and clue as to the course of the legal, social, and economical history of the country should be made available. It is the special value of Mr. McCrindle's work that it will form a solid, positive basis for the earliest period of authentic Indian history, &c .- The Civil and Military Gazette, Labore.

We are glad to learn that the papers by Mr. J. W. McGrindle (on Ptolemy's Geography of India) which have recently been appearing in the Indian Antiquary are to be published separately. The amount of patient and scholarly work which they indicate is of the kind that we are rather accustomed to look for from a German satant, and can hardly be properly appreciated by one who does not know by experience the difficulties of such investigations.— The Scottish Geographical Magazine.





PTOLEMY'S "Treatise on Geography," like his famous work on astronomy to which it formed the sequel, was destined to govern the world's opinion on the subject of which it treated, from the time of its publication until the dawn of the modern era, a period of about 1,300 years. This treatise must have been composed in the interests of chartography rather than of geography, for the anthor's aim is not so much to describe the earth's surface as to lay down. the principles on which maps should be constructed, and to determine the latitude and longitude of places with a view to their being mapped in their proper positions. The principles he here laid down have proved of permanent validity, and are still practically applied in the art of map-construction, but his determinations of the position of places, owing to the paucity and imperfection of the astronomical observations on which, in combination with the existing measurements of terrestrial distances his conclusions were based, are all, with very few exceptions, incorrect. The work lost, of course, much of its old authority as soon as the discoveries of modern times had brought its grave and manifold errors to light. It did

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not, however, on this account cease to be of high interest and value as an antiquarian record, if we may judge from the multiplicity of the learned disquisitions which have from time to time been published in elucidation of many points of Ptolemaic Geography.

There is perhaps no part of the contents which has received more attention from scholars than the chapters relating to India, where the tables abound to a surprising extent with names which are found nowhere else in classical literature, and which were doubtless obtained directly from Indian sources, rather than from reports of travellers or traders who had visited the country. On glancing over these names one cannot fail to remark how very few of them have any but the most distant resemblance to the indigenous names which they must have been intended to represent. Philologists, however, have made persistent efforts to penetrate the disguise which conceals the original forms of the names so much distorted by Ptolemy, and have succeeded in establishing a great number of satisfactory identifications, as well as in hitting upon others which have a balance of probability in their favour-a similar service has been rendered by the archeological investigations which have now for many years been systematically prosecuted under the auspices of the Indian Government.

The present work has for its main object to show concisely what has been accomplished ap to this time in this department of enquiry. It has been compiled from multifarious sources which are not easily accessible, as for instance from foreign publications not yet translated into our own language, and from the Journals and Transactions of various societies at home and abroad which concern themselves with Oriental literature.

I venture therefore to hope that my compendium, which it has taken much time and laborious research to prepare, may meet with recognition and acceptance as a useful contribution to general literature, while proving also serviceable to scholars as a work of reference.

I proceed now to indicate the method which I have followed in the treatment of my subject, and to specify the authorities on which I have principally relied. I have then, in an introductory chapter, attempted to give a succinct account of the general nature of Ptolemy's geographical system, and this is followed by a translation of several chapters of his First Book which serve to exhibit his general mode of procedure in dealing with questions of Geography, and at the same time convey his views of the configuration of the coasts of India, both on this side the Ganges and beyond. In translating the text I have taken it in detach-

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ments of convenient length, to each of which I have subjoined a commentary, the main object of which is-1st, to show, as far as has been ascertained, how each place named by Ptolemy in his Indian Tables has been identified ; 2nd, to trace the origin or etymology of each name, so far as it is possible to do so; and 3rd, to notice very concisely the most prominent facts in the ancient history of the places of importance mentioned. I have, as a rule, quoted the sources from which my information has been derived, but may here state that I have generally adopted the views of M. Vivien de Saint-Martin and those of Colonel Yule. whose map of ancient India in Smith's wellknown historical Ailas of Ancient Geography is allowed on all hands to be the best that has vet been produced. These authors have examined the greater part of the Ptolemaic Geography of India, and their conclusions are for the most part coincident. The works of Saint-Martin, which I have consulted, are these : Etude sur la Géographie Grecque et Latine de l'Inde, et en particulier sur l'Inde de Ptolémée, dans ses rapports avec la Géographie Sanskrite ; Mémoire Analytique sur la Carte de l'Asie Centrale et de l'Inde ; et Étude sur la Géographie et les populations primitives du Nord-Ouest de l'Inde d'après les hymnes védiques. Colonel Yule has expressed his views chiefly in the notes upon the map referred to, but also occasionally in the notes

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to his edition of Marco Polo and in other works from his pep. Frequent reference will be found in my notes to that work of vast erndition, Prof. Lassen's Indische Alierthumskunde, Unfortunately the section which he has devoted to a full examination of Ptolemy's India is the least satisfactory portion of his work. His system of identification is based on a wrong principle, and many of the conclusions to which it has led are such as cannot be accepted. His work is notwithstanding, as Yule says. "a precious mine of material for the study of the ancient grography of India." For elucidations of the Ptolemaic geography of particular portions of India I have consulted with great advantage such works as the following :--Wilson's Ariana Antiqua, General Cunningham's Geography of Ancient India, Vol. I. (all yet published), and his Reports on the Archeological Survey of India; Bishop Caldwell's Introduction to his Dravidian Grammar, valuable for identification of places in the south of the Peninsula; the Bombay Gazetteer, edited by Mr. J. M. Campbell, who has carefully investigated the antiquities of that Presidency; the volumes of Asiatic Researches; the Journals of the Royal Asiatic Society and of the kindred. Societies in India; the Journals of the Royal Geographical Society; the articles on India and places in India in Smith's Dictionary of Classical Geography, written almost all by Mr.

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Vaux; articles in the Indian Antiquary; Benfey's Indian in the Encyclopädie of Ersch and Grüber; the Abbé Halma's Traité de Géographie de Claude Ptolémée, Paris, 1828; the Chapters on Marinus and Ptolemy's System of Geography in Bunbury's History of Ancient Geography; Priaulx's Indian Travels of Apollonius of Tyana, &c.; Stephanos of Byzantium On Cities; Sir Emerson Tennent's Ceylon; Sir H. Rawlinson's articles on Central Asia which have appeared in various publications, and other works which need not here be specified.

There has recently been issued from the press of Firmin-Didot, Paris, the first volume of a new and most elaborate edition of Ptolemy's Geography, prepared by C. Müller, the learned editor of the *Geographi Graeci Minores*, but the work unfortunately has not advanced so far as to include the chapters which contain the geography of India.

I would here take the opportunity of expressing my obligations to Dr. Burgess, the late editor of the *Indian Antiquary*, for his careful revision of the proofs, and for sundry valuable suggestions.

Having thought it advisable to extend the scope of the work beyond the limits originally contemplated, I have included in it those chapters of the geography in which Chins, Central Asia, and all the provinces adjacent to India are described. The reader is thus

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presented with the Ptolemaic Geography of the whole of Asia, with the exception only of those countries which from propinquity and frequency of intercourse were well known to the nations of the West.

In a short Appendix will be found some additional notes.

The present volume forms the fourth of the Series of Annotated Translations of the Works of the Classical Writers which relate to India. Another volume, containing Strabo's Indian Geography and the Accounts given by Arrian and Curtius of the Makedonian Invasion of India, will complete the series.

3, ABBOTSFORD PARK, EDINBURGH, June, 1885.



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PTOLEMY'S GEOGRAPHY OF INDIA AND SOUTHERN ASIA.

INTRODUCTION.

Ptolemy and his System of Geography.

Klaudios Ptolemaios, or as he is commonly called, Ptolemy, was distinguished alike as a Mathematician, a Musician, an Astronomer and a Geographer, and was altogether one of the most accomplished men of science that antiquity produced. His works were considered as of paramount authority from the time of their publication until the discoveries of modern times had begun to show their imperfections and errors. It is surprising that with all his fame, which had even in his own lifetime become pre-eminent, that the particulars of his personal history should be shrouded in all but total darkness. Nothing in fact is known for certain regarding him further than that he flourished in Alexandria about the middle of the 2nd century of our æra, in the reign of Antoninus Pius, whom he appears to have survived.

His work on Geography formed a sequel to his great work on Astronomy, commonly called the Almagest. From its title $\Gamma \epsilon \omega \gamma \rho a \phi(\kappa)^{-1}$ 'Y $\phi' \gamma \gamma \sigma \sigma \sigma$, an Outline of Geography, we might be led to infer

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that it was a general treatise on the subject, like the comprehensive work of Strabo, but in reality it treats almost exclusively of Mathematical, or what may be called Cosmical, Geography. Ptolemy's object in composing it was not like that of the ordinary Geographer to describe places, but to correct and reform the map of the world in accordance with the increased knowledge which had been acquired of distant countries and with the improved state of science. He therefore limits his argument to an exposition of the geometrical principles on which Geography should be based, and to a determination of the position of places on the surface of the earth by their latitudes and longitudes. What he considered to be the proper method of determining geographical positions he states very clearly in the following passage: "The proper course," he says. "in drawing up a map of the world is to lav down as the basis of it those points that were determined by the most correct (astronomical) observations, and to fit into it those derived from other sources, so that their positions may suit as well as possible with the principal points thus laid down in the first instance."1

Unfortunately, as Bunbury remarks, it was impossible for him to carry out in practice—even approximately—the scheme that he had so well laid down in theory. The astronomical observations to which he could refer were but few and they were withal either so defective or so inaccurate that he could not use them with con-

¹ Book I. cap. 4. The translation is Bunbury's.



fidence. At the same time his information concerning many parts of the earth, whether owing to their remoteness or the conflicting accounts of travellers regarding them, was imperfect in the extreme. The extent, however, of his geographical knowledge was far greater than that possessed by any of his predecessors, and he had access to sources of information which enabled him to correct many of the errors into which they had fallen.

He was induced to undertake the composition of his Geography through his being dissatisfied more or less with all the existing systems. There was however one work-that of his immediate precursor. Marinos of Tyre-which approximated somewhat closely to his ideal, and which he therefore made the basis of his own treatise. Marinos, he tell us, had collected his materials with the most praiseworthy diligence, and had moreover sifted them both with care and judgment. He points out, however, that his system required correction both as to the method of delineating the sphere on a plane surface, and as to the computation of distances, which he generally exaggerated. He censures him likewise for having assigned to the known world too great a length from west to east, and too great a breadth from north to south.

Of Ptolemy's own system, the more prominent characteristics may now be noted: He assumed the earth to be a sphere, and adopting the estimate of Poseidônios fixed its circumference at 180,000 stadia, thus making the length of a degree at the equator to be only 500 stadia, instead of 600, which

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is its real length.³ To this fundamental miscalculation may be referred not a few of the most serious errors to be found in his work. With regard to the question of the length and the breadth of the inhabited part of the earth, a question of first importance in those days, he estimated its length as measured along the parallel of Rhodes⁶ which divided the then known world into two nearly equal portions at 72,000 stadia, and its breadth at 40,000. The meridian in the west from which he calculated his longitudes was that which passed through the Islands of the Blest (Maxápων Nησοι) probably the Canary Islands,⁴ and his most

² The Olympic stadium, which was in general use throughout Greece, contained 600 Greek feet, which were equal to 625 Roman feet, or 6065 English feet. The Roman mile contained 8 stadia, or about half a stadium less than an English mile. A stadium of 600 Greek feet was very nearly the 600th part of a degree, and 10 stadia are thorefore just about equal to a Nautical or Geographical mile. According to Eratosthenes, a degree at the Equator, was equal to 700 stadia, but according to Poseidónios it was equal to only 500. The truth lay between, but Ptolemy unfortunately followed Poseidónios in his error.

³ "The equinoctial line was of course perfectly fixed and definite in Ptolemy's mind, as an astronomical line; but he had no means of assigning its position on the Map of the World, except with reference to other parallels, such as the tropic at Syene, or the parallels of Alexandria and Rhodes, which had been determined by direct observation."—Bunbury, Hist. of Anc. Geog., vol. 11, p. 560, n. 2.

* The Island of Ferro-the westernmost of the Group of the Canaries, which was long taken as the prime meridian, and is still so taken in Germany-is really situated 18° 20' west of Greenwich, while Cape St. Vincent (called anciently the Sacred Cape) is just about 9°, so that the real difference between the two amounted to 9° 20' instead of only 2½°. Two corrections must therefore be applied to Ptolemy's longitudes-one-sixth must be deducted because of his under-estimate of the length

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eastern meridian was that which passed through the Metropolis of the Sinai, which he calls Sinai or Thinai, and places in 180° 40' E. Long, and 3º S. Lat. The distance of this meridian from that of Alexandria he estimated at 1195 degrees, and the distance of the first meridian from the same at 601 degrees, making together 180 degrees, or exactly one-half of the circumference of the earth. His estimate of the breadth he obtained by fixing the southern limit of the inhabited parts in the parallel of 161 degrees of South Latitude, which passes through a point as far south of the Equator as Meroë is north of it. And by fixing the northern limit in the parallel of 63 degrees North Latitude, which passes through Thoulê (probably the Shetland Islands), a space of nearly SO degrees was thus included between the two parallels, and this was equivalent in Ptolemy's mode of reckoning to 40.000 stadia.

Having made these determinations he had next to consider in what mode the surface of the earth with its meridians of longitude and parallels of latitude should be represented on a sphere and on a plane surface—of the two modes of delineation that on the sphere is the much easier to make, as it involves no method of projection, but a map drawn on a plane is far more convenient for use, as it presents simultaneously to the eye a far greater extent of surface. Marinos had drawn his map of the world on a plane, but his method

of a degree along the Equator, and $6^{\circ}50'$ must be added because Ferro was so much further west than he supposed. Subject to these corrections his longitudes would be fairly accurate, provided his calculations of distances were otherwise free from error. of projection was altogether unsatisfactory. It is thus described by Ptolemy : Marinos, he says, on account of the importance of the countries around the Mediterranean, kept as his base the line fixed on of old by Eratosthenes, viz., the parallel through Rhodes in the 36th degree of north latitude. He then calculated the length of a degree along this parallel, and found it to contain 400 stadia, the equatorial degree being taken at 500. Having divided this parallel into degrees he drew perpendiculars through the points of division for the meridians, and his parallels of latitude were straight lines parallel to that which passed through Rhodes. The imperfections of such a projection are obvious. It represented the parts of the earth north of the parallel of Rhodes much beyond, and those south of it much below, their proper length. Places again to the north of the line stood too far apart from each other, and those to the south of it too close together. The projection, moreover, is an erroneous representation, since the parallels of latitude ought to be circular arcs and not straight lines.

Ptolemy having pointed out these objections to the system of Marinos proceeds to explain the methods which he himself employed. We need say nothing more regarding them than that they were such as presented a near approximation to some of those which are still in use among modern Geographers.

Ptolemy's treatise is divided into 8 books. In the 1st or introductory book he treats first of Geography generally—he then explains and

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criticizes the system of Marinos, and concludes by describing the methods of projection which may be employed in the construction of maps. The next 6 books and the first 4 chapters of the 7th book consist of tables which give distinctly in degrees and parts of a degree the latitudes and longitudes of all the places in his map. These places are arranged together in sections according to the country or tribe to which they belong, and each section has prefixed to it a brief description of the boundaries and divisions of the part about to be noticed. Descriptive notices are also occasionally interspersed among the lists, but the number of such is by no means considerable. The remainder of the 7th book and the whole of the 8th are occupied with a description of a series of maps which, it would appear, had been prepared to accompany the publication of the work, and which are still extant. The number of the maps is twenty-six, viz. 10 for Europe, 4 for Libya, and 12 for Asia. They are drawn to different scales, larger or smaller, according as the division represented was more or less known. He gives for each map the latitudes and longitudes of a certain number of the most important cities contained in it, but these positions were not given in the same manner as in the tables, for the latitudes are now denoted by the length of the longest day and the longitudes according to the difference of time from Alexandria. It might be supposed that the positions in question were such as had been determined by actual astronomical observations, as distinguished from those in the Tables, which were for the most part derived from itine-

raries, or from records of voyages and travels. This supposition is however untenable, for we find that while the statements as to the length of the longest days at the selected places are always correct for the latitudes assigned them, they are often glaringly wrong for their real positions. Ptolemy, it is evident, first mapped out in the best way he could the places, and then calculated for the more important of these places the astronomical phenomena incident to them as so situated. I conclude by presenting the reader with a translation of some chapters of the Introductory Book," where Ptolemy in reviewing the estimate made by Marinos of the length of the known world from west to east, has frequent occasion to mention India and the Provinces beyond the Ganges, which together constitute what is now called Indo-China.

BOOK I., CAP. 11.

§ 1. What has now been stated will suffice to show us what extent in *breadth* it would be fair to assign to the inhabited world. Its *length* is given by Marinos at 15 hours, this being the distance comprised between his two extreme meridians—but in our opinion he has unduly extended the distance towards the east. In fact, if the estimate be properly reduced in this direction the entire length must be fixed at less than 12 hours, the Islands of the Blest being taken as the limit towards

⁵ The edition used is that of C. F. A. Noble, Leipsic, 1843.

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the west, and the remotest parts of Sôra and the Sinai^a and Kattigara' as the limit towards

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NINSIN COLUMN

GOVERNMENT OF

⁶ "China for nearly 1,000 years has been known to the nations of Inner Asia, and to those whose acquaintance with it was got by that channel, ander the name of Khitai, Khata, or Cathay, e.g., the Russians still call it Khitai. The pair of names, Khitai and Machin, or Cathay and China, is analogous to the other pair Seres and Sinai. Seres was the name of the great nation in the far east as known by land, Sinai as known by sea; and they were often supposed to be diverse, just as Cathay and China were afterwards." Yule's Marco Polo, 2nd ed., Introd., p. 11 and note.

Polo, 2nd ed., Introd., p. 11 and note. 7 The locality of Kattigara has been fixed very variously. Richthofen identified it with Kian-chi in Tong-king, and Colonel Yule has adopted this view. "To myself," he says, "the arguments adduced by Richthofen in favour of the location of Kattigara in the Gulf of Tong-king, are absolutely convincing. This position seems to satisfy every condition. For 1st, Tong-king was for some centuries at that period (B. C. 111 to A.D. 263), only incorporated as part of the Chinese Empire. 2nd, the only part mentioned in the Chinese annals as at that period open to foreign traffic was Kianchi, substantially identical with the modern capital of Tong-king, Kesho or Hanoi. Whilst there are no notices of foreign arrivals by any other approach, there are repeated notices of such arrivals by this province, are repeated nonces of such arrivals by this province, including that famous embassy from Antan, King of Ta-t'sin, i.e., M. Aurelius Antoninus (A.D. 161-180) in A.D. 166. The province in question was then known as Ji-nan (or Zhi-man, French); whence possibly the name Sinal, which has travelled so far and spread over such libraries of literature. The Chinese Annalist who mentions the Roman Embassy adds: 'The people of that kingdom (Ta-t'sin or the Roman Embire) came in numbers for trading purposes to Fu-nan, Ji-nan, and Kian-chi.' Fu-nan we have seen, was Champa, or Zabai. In Ji-nan with its chief port Kian-chi, we may recognize with assurance Kattigara, Portus Sinarum. Richthofen's solution has the advantages of preserving the true meaning of Sinai as the Chinese, and of locating the Portns Sinarum in what was then politically a part of China, whilst the remote Metropolis Thinae remains unequivocally the capital of the Empire, whether Si-guan-fu in Chen-si, or Lo-yang in Ho-nan be meant. I will only add that though we and Katighora in Edrisi's Geography, I apprehend this to be a more adoption from the Geogra-

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the east. § 2. Now the entire distance from the Islands of the Blest to the passage of

phy of Ptolemy; founded on no recent authority. It must have kept its place also on the later mediæval maps ; for Pigafetta, in that part of the circumnavigation where the crew of the Victoria began to look out of those who have made cosmography their study, for they have never seen it), is not placed where they think, but is towards the north in 12° or thereabouts.' [The Cape looked for was evidently the extreme S. E. point of Asia, actually represented by Cape Varela or Cape St. James on the coast of Cochin-China.] It is probable that, as Richthofen points out, Kattigara, or at any rate Kianchi, was the Lukin or Al-Wakin of the early Arab Geographers. But the terminus of the Arab voyagers of the 9th century was no longer in Tong-King, it was Khân-fû, apparently the Kan-pu of the Chinese, the haven of the great city which we know as Hang-chow, and which then hay on or near a delta-arm of the great Yang-tse." These arguments may be accepted as conclusively settling the vexed question as to the position of Kattigara. In a paper, however, recently read before the B. Asiatic Society, Mr. Holt, an eminent Chinese scholar, expressed a different view. He "showed that there was good evidence of a very early communication from some porton the Chinese coast to near Martaban, or along the valley of the Irawadi to the north-west capital of China, then at Si-gnan-fu or Ho-nan-fu. He then showed that the name of China had been derived from the Indians, who first knew China, and was not due to the Tsin Dynasty, but more probably came from the name of the Compass. specimens of which were supplied to the early envoys. the Chinese being thus known in India as the ' Compasspeople,' just as the Seres, another Chinese population, derived their western name from 'Silk.' That the knowledge of this fact was lest to both Indians and Chinese is clear from the use by Hinen-Tsiang and later writers of two symbols (see Merrisen's Dic-tionary, syllable part, No. 3,033) to designate the country, as these, while giving the sound 'Che-ha.' indicate that they are substitutes for original words of like sounds, the true sense of which cannot now be recovered. Having shown that M. Reinand's view of an intercourse between China and Egypt in the first century A.D. has no real foundation, Mr. Holt

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the Euphrates at Hierapolis, as measured along the parallel of Rhodes, is accurately determined by summing together the several intervening distances as estimated in stadia by Marinos, for not only were the distances well ascertained from being frequently traversed, but Marinos seems moreover in his computation of the greater distances, to have taken into account the necessary corrections for irregularities and deviations." Heunderstood, besides, that while the length of a single degree of the 360 degrees into which the equatorial circle is divided measures, as in the commonly accepted estimate, 500 stadia, the parallel circle which passes through Rhodes in 36 degrees of N. latitude, measures about 400 stadia. § 3. It measures, in fact, a little over that number if we go by the exact proportion of the parallels, but the excess is so trifling as in the case of the equatorial degree, that it may be neglected. But

further stated that there was no evidence of an embassy from M. Aurelius having gone by see to China in A.D. 166. In conclusion, he urged, that in his judgment, there was no proof whatever of any knowledge of a maritime way to China before the 4th century A.D., the voyage even of Fa-hian, at that pariod being open to serious criticism. He believes therefore with M. Gosselin that the Kattigara of Ptolemy was probably not far from the present Martaban, and that India for a considerable period up to the 7th century A.D. dominated over Cambodia."

⁸ Deviations from the straight line by which the route would be represented in the map. The irregularities refer to the occasional shortening of the daily march by obstacles of various kinds, bad roads, hostile attacks, fatigue, &c.

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his estimates of the distances beyond Hierapolis require correction, § 4. He computes the distance from the passage of the Euphrates already mentioned to the Stone Tower³ at 876

" "One of the circumstances of the route that Ptolemy has reproduced from Marinos is that on leaving Baktra the traveller directed his course for a long enough time towards the North. Assuredly the caravans touched at Samarkand (the Marakanda of Greek authors) which was then, as now, one of the important centres of the region beyond the Oxus. For passing from Sogdiana to the east of the snowy range, which covers the sources of the Jaxartes and the Oxus, three main routes have existed at all times : that of the south, which ascends the high valleys of the Oxus through Badakshan; that in the centre, which goes directly to Kashgar by the high valleys of the Syr-Darya or Jazartes; and lastly that of the north, which goes down a part of the middle valley of the Jaxartes before turning to the east towards Chinese Tartary. Of these three routes, the itinerary of the Greek merchants could only apply to the 2nd or the 3rd ; and if, as has been for a long time supposed with much probability, the Stone Towar of the Itinerary is found in an important place belonging to the valley of the Jaxartes, of which the name Tishkand has precisely the same meaning in the language of the Turkomans, it would be the northern route that the caravan of Maës would have followed. The march of seven months in advancing constantly towards the east leads necessarily towards the north of China (Saint-Martin, Ltude, pp. 428-9.) Sir H. Rawlinson however assigns it a more southern position, placing it at Tash-kurghan, an ancient city which was of old the capital of the Sarik-kul territory, a district lying between Yarkand and Badakshan, and known to the Chinese as Ko-panto. The walls of Tash-kurghan are built of unusually large blocks of stone. It was no doubt, Sir Henry remarks, owing to the massive materials of which it was built, that it received the name of Tash-kurghan or the 'Stone Fort,' and it seems to have every claim to represent the λίθινος πύργος of Ptolemy, where the caravans rendezvonsed before entering China, in preference to Tashkand or Ush, which have been selected as the site of the Stone Tower by other geographers."-Jour. B. Geog. Soc. vol. XLII, p. 327.



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schemi¹⁰ or 26,280 stadia, and from the Stone Tower to Sêra, the metropolis of the Sêres, at a 7 months' journey or 36,200 stadia as reckoned along the same parallel. Now in neither case has he made the proper deductions for the excess caused by deviations; and for the second route he falls into the same absurdity as when he estimated the distance from the Garamantes to Agisymba¹¹ § 5. Where he had to deduct above half of the stadia in the march of the 3 months and 14 days, since such a march could not possibly have been accomplished without halting.

¹⁰ According to Heredotos (lib. II, c. vi), the schoinos was equal to two Persian parasangs or 60 stadia, but it was a very vague and uncertain measure, varying as Strabo informs us (lib. XVII, c. i, 24) from 30 to 120 stadia. In the case before us, it was taken as equivalent to the parasang of 30 stadia and afforded with correction some approximation to the trath.

¹¹ "The Roman arms had been carried during the reign of Augastas (B. C. 19) as far as the land of the Garamantes, the modern Fezzan, and though the Roman Emperors never attempted to establish their dominon over the country, they appear to have permanently maintained friendly relations with its rulers, which enabled their officers to make use of the casis of the Garamantes as their point of departure from which to penetrate further into the interior. Setting out from thence, a General named Septimius Plancus 'arrived at the land of the Ethiopiaus, after a march of 3 months towards the south.' Another Commander named Julius Maternus, apparently at a later date setting out from Lertis Magna, proceeded from thence to Garama, where he united his forces with those of the king of the Garamantes, who was himself undertaking a hostile expedition egainst the Ethiopians, and their combined armies 'after marching for four months towards the south,' arrived at a country inhabited by Ethiopians, called Agisymba, in which rhinoceroses abounded.'----Bunbury, Hist, of Anc. Geog., vol. II, pp. 522-3.



The necessity for halting would be still more urgent when the march was one which occupied 7 months. § 6. But the former march was accomplished even by the king of the country himself, who would naturally use every precaution, and the weather besides was all throughout most propitious. But the route from the Stone Tower to Sêra is exposed to violent storms, for as he himself assumes, it lies under the parallels of the Hellespont and Byzantium, 19 so that the progress of travellers would be frequently interrupted. § 7. Now it was by means of commerce this became known, for Marinos tells, us that one Maës, a Makedonian, called also Titianus, who was a merchant by hereditary profession, had written a book giving the measurement in question, which he had obtained not by visiting the Sêres in person, but from the agents whom he had sent to them. But Marinos seems to have distrusted accounts borrowed from traders. § 8. In giving, for instance, on the authority of Philêmon, the length of Ivernia (Ireland) at a 20 days' journey, he refuses to accept this estimate, which was got, he tells us, from merchants, whom he reprobates as a class of men too much engrossed with their own proper business to care about ascertaining the truth, and who also from mere vanity frequently exaggerated distances. So

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too, in the case before ns, it is manifest that nothing in the course of the 7 months' journey was thought worthy either of record or remembrance by the travellers except the prodigious time taken to perform it.

CAP. 12.

§ 1. Taking all this into consideration, together with the fact that the route does not lie along one and the same parallel (the Stone Tower being situated near the parallel of Byzantium, and Sêra lying farther south than the parallel through the Hellespont) it would appear but reasonable in this case also to diminish by not less than a half the distance altogether traversed in the 7 months' journey, computed at 36,200 stadia, and so let us reduce the number of stadia which these represent at the equator by one-half only, and we thus obtain (22,625) stadia or 451 degrees.13 § 2. For it would be absurd, and show a want of proper judgment, if, when reason enjoins us to curtail the length of both routes, we should follow the injunction with respect to the African route, to the length of which there is the obvious objection, viz., the species of animals in the neighbourhood of Agisymba,

¹³ 36,200 stadia along the parallel of Rhodes are equivalent, according to Ptolemy's system, to 45,250 stadia along the equator, and this sum reduced by a half gives the figures in the text.



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which cannot bear to be transplanted from their own climate to another, while we refuse to follow the injunction with regard to the route from the Stone Tower, because there is not a similar objection to its length, seeing that the temperature all along this route is uniform, quite independently of its being longer or shorter. Just as if one who reasons according to the principles of philosophy, could not, unless the case were otherwise clear, arrive at a sound conclusion.¹⁴

§ 3. With regard again to the first of the two Asiatic routes, that, I mean which leads from the Euphrates to the Stone Tower, the estimate of 870 schemi must be reduced to 800 only, or 24,000 stadia, on account of deviations, § 4. We

¹⁴ Marinos was aware that Acisymba lay in a hot climate, from the fact that its neighbourhood was reported to be a favourite resort for rhinocercoses, and he was thus compelled to reduce his first stimute of its distance, which would have placed it in far too cold a latitude for these animals, which are found only in hot regions. But no such papable necessity compelled him to reduce his estimate of the distance from the Stone Tower to the Matropolls of the Stress, for here the route had an equable temperature, as it did not recade from the some parallel of latitude. A little reflexion, however, might have shown Marinos that his instance available. It is on the very face of it absurd to suppose that a caravan could have marched through a difficult and maknown country for 7 months consecutively at an average progress of 170 statel, out 2000.



may accept as correct his figures for the entire distance as the several stages had been frequently traversed and had therefore been measured with accuracy. But that there were numerous deviations is evident from what Marinos himself tells us. § 5. For the route from the passage of the Euphrates at Hierapolis through Mesopotamia to the Tigris, and the route thence through the Garamaioi of Assyria, and through Media to Ekbatana and the Kaspian Gates, and through Parthia to Hekatompylos Marinos considers to lie along the parallel which passes through Rhodes, for he traces (in his map) this parallel as passing through these regions. § 6. But the route from Hekatompylos to the capital city of Hyrkania must, of necessity, diverge to the north, because that city lies somewhere between the parallel of Smyrna and that of the Hellespont, since the parallel of Smyrna is traced as passing below Hyrkania and that of the Hellespont through the southern parts of the Hyrkanian Sea from the city bearing the same name, which lies a little farther north. § 7. But. again, the route herefrom to Antiokheia (Merv) of Margiana through Areia, at first bends towards the south, since Areia lies under the same parallel as the Kaspian Gates. and then afterwards turns towards the north. Antiokheia being situated under the parallel of

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the Hellespont.15 The route after this runs in an eastward direction to Baktra whence it turns towards the north in ascending the mountains of the Kômêdoi, and then in passing through these mountains it pursues a southern course as far as the ravine that opens into the plain country. § 8. For the northern parts of the mountain region and those furthest to the west where the ascent begins, are placed by him under the parallel of Byzantium, and those in the south and the east under the parallel of the Hellespont. For this reason, he says, that this route makes a detour of equal length in opposite directions. that in advancing to the east it bends towards the south, and thereafter probably runs up towards the north for 50 schani, till it reaches the Stone Tower. § 9. For to quote his own

15	The actual 1	atitudes of	the places	here	mentioned
may	be compared	with those	of Ptolemy	-	

an always the production of the state	Real Lat. I	Ptolemy's Lat.
Byzantium	41°	43° 5'
Hellespont	40°	41° 15'
Smyrna	38° 28'	38° 35'
Issus	37°	36° 35'
Rhodes	36° 24'	36° 25'
Hierapolis	36° 28'	36° 15'
Ekbatana	34° 50'	37° 45'
Kaspian Gates	35° 30'	37°
Hekatompylos	35° 40'	37° 50'
Antiokheia (Merv)	37° 35'	40° 20'
Baktra (Balkh)	36° 40'	41°
Stone Tower (Tåshkand)	42° 58'	430
Sêra Metropolis (Ho-nan)	38° 35	33° 58



words, "When the traveller has ascended the ravine he arrives at the Stone Tower, after which the mountains that trend to the east unite with Imaus, the range that runs up to the north from Palimbothra." § 10. If, then, to the 60 degrees made up of the 24,000 stadia, we add the 45‡ degrees which represent the distance from the Stone Tower to Sêra, we get $105\frac{1}{4}$ degrees as the distance between the Euphrates and Sêra as measured along the parallel of Rhodes.¹⁶ § 11. But, further, we

¹⁹ Saint-Martin identifies Séra, the Metropolis of the Séres, with a site near Ho-nan-fn. He says, (Etudes, p. 492) "At the time when the caravan journey reported by Maës was made (in the first half of the first contury of our era), the Han surnamed Eastern held the rains of government, and their residence was at Lo-yang near the present City of Ho-nan-fou, not far from the southern bank of the lower Hoang-ho. It is there then we should look to find the place which in their ignorance of the language of the country, and in their disdain for barbarous names, the Greek traders designated merely as the Metropolis of the Séres." The road these traders took appears to have been the same by which Hiuen-Tsiang travelled towards India.

We may here insert for comparison with Ptolemy's distances two itineraries, one by Strabo and the other by Pliny. Strabo (lib. XI, c. viii, 9) says: "These are the distances which he (Eratosthenes) gives :--

Stadia.

From the Kaspian Sea to the Kyros about	1,800
Thence to the Kaspian Gates	5.600
Thence to Alexandreia of the Areioi (Herat)	6.400
Thence to Baktra, called also Zariaspa (Balkh) Thence to the Jaxartes which Alayandar	3,870
reached, about	5,000
Making a total of	22,670."
He also assigns the following distances f	rom the
Laspian Gates to India :	Stadia,
"To Hekatompylos	1.960
To Alexandreia of the Areioi (Horst)	1 520



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can infer from the number of stadia which he gives as the distance between successive places lying along the same parallel, that the distance from the Islands of the Blest to the sacred Promontory in Spain (*Cape St. Vincent*), is $2\frac{1}{2}$ degrees, and the distance thence to the mouth of the Bætis (*Guadalquivir*), the same.

the second s	Stadia.
Thonce to Prophthasia in Dranga (a little north of lake Zarah	1.600
Thence to the City Arakhotos (Ulan Robút) Then to Ortospana (Kábul) on the 3 roads	4,120
from Baktan Thence to the confines of India	$2,000 \\ 1,000$
Which together amount to	35 000 2

Pluy (lib. VI, c. xxi) says: "Diognetus and Baeton, his (Alexander's) measurers, have recorded that from the KasjuanGades to Hokatompylos of the Parthinars there were as many miles as we have stated, thence to Alexandria Arion a city built by that king, 575 miles, to Prophthasia of the Drangue 198 miles, to the town of the Arakhosii 363 miles, to Hortospanum 175 miles, the processor at the anade the transfer of the form of the Arakhosii der's towa (Opiané) 50 miles. In some copies mumbers differing from these are found. They state that the Instmaned city lay at the foct of Gancasus ; from that the distance to the Cophes and Peucolatis, a town of the Indians, was 237 miles, and thenes to the river Indus and town of Taxila 60 miles, to the Hydaspes, a famous river, 190 miles, to the Hypasis, no mean river [IXXXIXI 300which was the limit of Alexander's progress, although he crossed the river and dedicated altars on the far-off back, as the letters of the king himself agree in stating." The Kaspian Gates formed a point of greatimportance in anoint Geography, and many of the meridians were measured from it. The pass has been clearly identified with that now known as the Sirdar Pass between the art and Kishlak in Khowar. Arrium states that the distance from the city of Bhagai to the entrance of the Gates was a one day's march. This was, however, a bored march, as the ruins of Rhagai (now Rai, about 5 miles from Tonay are somewhere about 30 miles distant from the Pasa.


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From the Bætis to Kalpê, and the entrance of the Straits, $2\frac{1}{2}$ degrees. From the Straits to Karallis in Sardinia, 25 degrees. From Karallis to Lilybaion, in Sicily, $4\frac{1}{2}$ degrees. From this Cape to Pakhynos, 3 degrees. From this Cape to Pakhynos to Tainaros, in Lakonia, 10 degrees. Thence to Rhodes, $8\frac{1}{4}$ degrees. From Rhodes to Issus, $11\frac{1}{4}$ degrees, and finally from Issos to the Enphrates, $2\frac{1}{2}$ degrees.¹⁷ § 12. The

¹⁷ I may present here the tabular form in which Mr. Bunbury (vol. 11, p. 638) exhibits the longitudes of the principal points in the Mediferranean as given by Ptolemy, and the actual longitudes of the same points commuted from Ferre:

100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100	Longitude in Ptolemy.		Real longitude E. of Ferro.	
Sacred Promontory	22	30'	9° 20'	
Mouth of Bætis	5°	20'	12°	
Calpe (at mouth of Stra	aits). 7°	30	189	
Caralis in Sardinia	32°	30'	27° 30'	
Lilybæum in Sicily	37°		30° 45'	
Pachynus (Prom.) in Si	icily. 40°		33° 25'	
Tænarus (Prom.)	50°		40° 50'	
Rhodes	58°	20'	46° 45'	
Issus	69°	20	54° 30/	

The same authority observes (vol. II, p. 564) "Ptolemy thus made the whole interval from the Sacred Cape to Issus, which really comprises only about 45°15' to extend over not less than 67 degrees of longitude, and the length of the Mediterranean itself from Calpe to Issus, to amount to 62 degrees; rather more than 20 degrees beyond the truth. It is easy to detect one principal source of this enormous error. Though the distances above given are reported by Tholemy in degrees of longitude, they were computed by Marinos himself from what he calls stadiarms, that is from distances given in maritime itineraries and reported in stadia. In other words, he took the statements and estimates of preceding authorities and converted them into degrees of longitude, according to his own calculation that a degree on the equator was equal to 500 stadia, and

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sum of these particular distances gives a total of 72 degrees, consequently the entire length of the known world between the meridian of the Islands of the Blest and that of the Sêres is $177\frac{1}{4}$ degrees, as has been already shown.¹⁵

CAP, 13.

§ 1. That such is the length of the inhabited world may also be inferred from his estimate of the distances in a voyage from India to the Gulf of the Sinai and Kattigara, if the sinuosities of the coast and irregularity of the navigation be taken into account, together with the positions as drawn into nearer proximity in the projections; for, he says, that beyond the Cape called Kôry where the Kolkhic Gulf terminates, the Argaric Gulf begins, and that the distance thence to the City of Kouroula, which is situated to the north-east of Kôry is 3,400 stadia. § 2. The

consequently a degree of longitude in latitude 36° would be equal (approximately) to 400 stadia." The total longth of the Mediterranean computed from the stadiasmoi must have been 24.800. This was an improvement on the estimate of Eratosthenes, but was still excessive. In the ancient mode of reckoming sea distances the tendency was almost uniformly towards exaggeration.

In the accient node of reckning sa distances the tendency was almost uniformly towards exaggeration. ¹⁶ The different corrections to be applied to Piolemy's eastern longitudes have been calculated by Sir Henry Rawlinson to amount to three-tenths, which is within one-seventieth part of the empirical correction used by M. Gossellin. [If we take one-fifth from Piolemy's longitude of a place, and deduct 17 43 for the W. longitude of Ferro, we obtain very approximately the modern English longitude. Thus, for Barygaza, Piolemy's longitude is 113°15' and 113°15'-22°59'-17°43'=73°53', or only b' less than the true longitude W. of Greenwich. -J. B.]

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distance right across may, therefore, be estimated at about 2,030 stadia, since we have to deduct a third because of the navigation having followed the curvature of the Gulf, and have also to make allowances for irregularities in the length of the courses run. § 3. If now we further reduce this amount by a third, because the sailing, though subject to interruption, was taken as continuous, there remain 1,350 stadia, determining the position of Kouroula as situated north-east from Körv. § 4. If now this distance be referred to a line running parallel to the equator and towards the East, and we reduce its length by half in accordance with the intercepted angle, we shall have as the distance between the meridian of Kouroula and that of Köry, 675 stadia, or 11 degree, since the parallels of these places do not differ materially from the great circle.10

§ 5. But to proceed : the course of the voyage from Kouroura lies, he says, to the sontheast as far as Paloura, the distance being 9,450 stadia. Here, if we deduct as before onethird for the irregularities in the length of the courses, we shall have the distance on account of the navigation having been continuous to

¹⁹ By the intercepted angle is meant the angle contained by two straight lines drawn from Kôry, one running north-east to Kouroula and the other parallel to the Equator. In Ptolemy's map Kouroula is so placed that its distance in a straight line from Kôry is about double the distance between the meridians of those two places.



the south-east about 6,300 stadia. § 6. And if we deduct from this in like manner as before one-sixth, in order to find the distance parallel to the equator, we shall make the interval between the meridians of these two places 5,250 stadia, or $10\frac{1}{2}$ degrees.

§ 7. At this place the Gangetic Gulf begins, which he estimates to be in circuit 19.000 stadia. The passage across it from Paloura to Sada in a direct line from west to east is 1.300 stadia. Here, then, we have but one deduction to make, viz., one-third on account of the irregularity of the navigation, leaving as the distance between the meridians of Paloura and Sada 8,670 stadia, or 171 degrees. § 8. The voyage is continued onward from Sada to the City of Tamala, a distance of 3,500 stadia, in a south-eastward direction. If a third be here again deducted on account of irregularities, we find the length of the continuous passage to be 2,330 stadia, but we must further take into account the divergence towards the south-east, and deduct one-sixth, so we find the distance between the meridians in question to be 1,940 stadia, or 3° 50' nearly. § 9. He next sets down the passage from Tamala to the Golden Khersonese at 1,600 stadia, the direction being still towards the south-east, so that after making the usual deductions there remain as the distance between the two meridians 900 studia, or 1° 48'. The

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sum of these particulars makes the distance from Cape K or y to the Golden Khersonese to be 34° 48'.

CAP. 14.

§ 1. Marines does not state the number of stadia in the passage from the Golden Khersonese to Kattigara, but says that one Alexander had written that the land thereafter faced the south, and that those sailing along this coast reached the city of Zaba in 20 days, and by continuing the voyage from Zaba southward, but keeping more to the left, they arrived after some days at Kattigara. § 2. He then makes this distance very great by taking the expression "some days" to mean "many days," assigning as his reason that the days occupied by the voyage were too many to be counted,-a most absurd reason, it strikes me. § 3. For would even the number of days it takes to go round the whole world be past counting ? And was thereanything to prevent Alexander writing "many" instead of "some," especially when we find him saying that Dioskeros had reported that the voyage from Rhapta to Cape. Prasum took "many days." One might in fact with far more reason take "some" to mean " a few," for we have been wont to censure this style (of expression). 20 § 4. So now lest we

²⁰ To account for the seeming caprice which led Marinos to take the expression some days as equivalent to ever so many days it has been supposed that he had

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should appear to fallourselves into the same error, that of adapting conjectures about distances to some number already fixed on, let us compare the voyage from the Golden Khersonese to

adopted the theory that Kattigara, the furthest point nearly under the same moridian as Séra, the furthest point in the same direction that had been reached by land. Unfortunately the expression used by Alexander some days did not square with this theory, and it was all the worse in consequence for that expression. "The result," says Mr. Bunbary (vol. II, p. 537), " derived by Marinos from these calculations was to place Kattigara at a distance of not less than 100 degrees of longitude, or nearly 50,000 stadia, east of Cape Kory ; and as he placed that promontory in 1251° of longitude east of the Fortunate Islands, he arrived at the conclusion that the total length of the inhabited world was, in round numbers, 2253, equivalent, according to his calculation to 112,500 stadia. As he adopted the system of Poseidônios, which gave only 180,000 stadia for the circumference of the globe, he thus made the portion of it which he supposed to be known, to extend over nearly two-thirds of the whole circumference. This position of Cape Kôry, which was adopted by Ptolemy as a position well established, was already nearly 34⁴ too far to the east; but it was by giving the enormous extension we have pointed out to the coast of Asia beyond that promontory, that he fell into this stupendous error, which though party corrected by Ptolemy, was destined to exercise so great an influence upon the future progress of geogra-phy. Columbus by accepting Ptolemy's estimate of the circumforence of the globe greatly under-esti-mated the distance between the western shores of the Atlantic and the castorn shores of Asia, and hence was led to undertake his memorable enterprise with all the greater hope and courage.

With reference to the position of Cape Kôry as given by Ptolemy, Bunbury says (Vol. II, p. 537, note): "Cape Kôry is placed by Ptolemy, who on this point apparently follows Marinos, in 125° E. Longitude. It is really situated S0° E. of Greenwich and 98° E. of Ferro; but as Ptolemy made a fundamental error in the position of his primary meridian of nearly 7° this must be added to the amount of his error in this instance. He himself states that Cape Kôry was 120° E. of the mouth of the Betis, the read difference of longitude being only 86°20."

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Kattigara, consisting of the 20 days to Zaba and the "some days" thence to Kattigara with the voyage from Arômata to Cape Prasum, and we find that the voyage from Arômata to Rhapta took also 20 days as reported by Theophilos, and the voyage from Rhapta to Prasum "many more days" as reported by Dioskoros, so that we may set side by side the "some days" with the "many days" and like Marinos take them to be equivalent. § 5. Since then, we have shown both by reasoning and by stating ascertained facts, that Prasum is under the parallel of 16° 25' in South latitude, while the parallel through Cape Arômata is 4° 15' in North latitude, making the distance between the two capes 20° 40', we might with good reason make the distance from the Golden Khersonese to Zaba and thence to Kattigara just about the same. § 6. It is not necessary to curtail the distance from the Golden Khersonese to Zaba, since as the coast faces the south it must run parallel with the equator. We must reduce, however, the distance from Zaba to Kattigara, since the course of the navigation is towards the south and the east, in order that we may find the position parallel to the equator. § 7. If again, in our uncertainty as to the real excess of the distances, we allot say one-half of the degrees to each of these distances, and from the 13° 20' between Zaba and Kattigara we deduct a third on account of the divergence, we shall have the



distance from the Golden Khersonese to Kattigara along a line parallel to the equator of about $17^{\circ} 10'$. § 8. But it has been shown that the distance from Cape Kôry to the Golden Khersonese is $34^{\circ}48'$, and so the entire distance from Kôry to Kattigara will be about 52° .

§ 9. But again, the meridian which passes through the source of the River Indus is a little further west than the Northern Promontory of Taprobanê, which according to Marinos is opposite to Kôry, from which the meridian which passes through the mouths of the River Bætis is a distance of 8 hours or 120°. Now as this meridian is 5° from that of the Islands of the Blest, the meridian of Cape Kôry is more than 125° from the meridian of the Islands of the Blest. But the meridian through Kattigara is distant from that through the Islands of the Blest a little more than 177° in the latitude of Kôry, each of which contains about the same number of stadia as a degree reckoned along the parallel of Rhodes. § 10. The entire length then of the world to the Metropolis of the Sinai may be taken at 180 degrees or an interval of 12 hours, since it is agreed on all hands that this Metropolis lies further east than Kattigara, so that the length along the parallel of Rhodes will be 72,000 stadia.

CAP. 17, (part).

§ 3. For all who have crossed the seas to those places agree in assuring me that the district of

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Sakhalitês in Arabia, and the Galf of the same name, lie to the east of Syagros, and not to the west of it as stated by Marinos, who also makes Simylla, the emporium in India, to be further west not only than Cape Komari, but also than the Indus. § 4. 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 only to the south of the mouths of the river, and not also to west of them. § 5. 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, was towards the east, and in returning towards the west, but at the same time they acknowledged that the period which was occupied in making the voyages was neither fixed nor regular. The country of the Sêres and their Metropolis was situated to the north of the Sinai, but the regions to the eastward of both those people were unknown, abounding it would appear, in swamps, wherein grew reeds that were of a large size and so close together that the inhabitants by means of them could go right across from one end of a swamp to the other. In travelling from these parts there

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was not only the road that led to Baktrianê by way of the Stone Tower, but also a road that led into India through Palimbothra. The road again that led from the Metropolis of the Sinai to the Haven at Kattigara runs in a south-west direction, and hence this road does not coincide with the meridian which passes through Sêra and Kattigara, but, from what Marinos tell us, with some one or other of those meridians that are further east.

I may conclude this prefatory matter by quoting from Mr. Bunbury his general estimate of the value of Ptolemy's Indian Geography as set forth in his criticism of Ptolemy's Map of India.

His strictures, though well grounded, may perhaps be considered to incline to the side of severity. He says (vol. II, pp. 642-3), "Some excellent remarks on the portion of Ptolemy's work devoted to India, the nature of the different materials of which he made use, and the manner in which he employed them, will be found in Colonel Yule's introduction to his Map of India, in Dr. Smith's Atlas of Ancient Geography (pp. 22-24). These remarks are indeed in great measure applicable to the mode of proceeding of the Alexandrian Geographer in many other cases also, though the result is particularly conspicuous in India from the fulness of the information-crude and undigested as it was-which he had managed to bring together. The result, as presented to us in the tables of Ptolemy, is a map of utter confusion, out of which it is very difficult to extract in a few instances any definite conclusions." The attempt

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of Lassen to identify the various places mentioned by Ptolemy, is based throughout upon the fundamental error of supposing that the geographer possessed a Map of India similar to our own, and that we have only to compare the ancient and modern names in order to connect the two. As Col. Yule justly observes: " Practically, he (Lassen) deals with Ptolemy's compilation as if that Geographer had possessed a collection of real Indian surveys, with the data systematically co-ordinated. The fact is, that if we should take one of the rude maps of India that appeared in the 16th century (e.g. in Mercator or in Lindschoten). draw lines of latitude and longitude, and then more Ptolemaico construct tables registering the coordinates of cities, sources and confluences as they appeared in that map, this would be the sort of material we have to deal with in Ptolemy's India." But, in fact, the case is much stronger than Col. Yule puts it. For such a map as he refers to, of the 16th century, however rude, would give a generally correct idea of the form and configuration of the Indian Peninsula. But this, as we have seen, was utterly misconceived by Ptolemy. Hence he had to fit his data, derived from various sources. such as maritime and land itineraries, based upon real experience, into a framework to which they were wholly unsuited, and this could only be effected by some Procrustean process, or rather by a repetition of such processes, concerning which we are left wholly in the dark.

Col. Yule's map of Ancient India is undoubtedly by far the best that has yet been produced: it is indeed the only attempt to interpret Ptolemy



data, upon which such a map must mainly be founded upon anything like sound critical principles. But it must be confessed that the result is far from encouraging. So small a proportion of Ptolemy's names can find a place at all, and so many of those even that appear on the map are admitted by its author to rest upon very dubious authority; that we remain almost wholly in the dark as to the greater part of his voluminous catalogues; and are equally unable to identify the localities which he meant to designate, and to pronounce an opinion upon the real value of his materials."

BOOK VII.

Contents.

Description of the furthest parts of Greater Asia, according to the existing provinces and Satrapies.

- 1. [Tenth Map] of India within the River Gauges.
- 2. [Eleventh Map] of India beyond the Ganges. of the Sinai.

3. [Twelfth Map]

of the Island of Taprobané and the islands surrounding it.

4. Outline Sketch of the Map of the Inhabited World.

Delineation of the Armillary Sphere with the Inhabited World.

Sketch of the World in Projection.

5. There are 400 Provinces and 30 Maps.]

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INDIA

CAP. I.

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Description of India within the Ganges.

§ 1. India within the river Ganges is bounded on the west by the Paropanisadai and Arakhôsia and Gedrôsia along their eastern sides already indicated; on the north by Mount Imaös along the Sogdiaioi and the Sakai lying above it; on the east by the river Ganges; and on the south and again on the west by a portion of the Indian Ocean. The circuit of the coast of this ocean is thus described :--

2. In Syrastrênê, on the Gulfcalled Kanthi, a roadstead and harbour.. 109° 30′ 20° The most western mouth of

the River Indus called

soun (the Golden)	111° 20'	19° 50'
The 4th called Kariphron	111° 40'	19° 50'
The 5th called Sapara	112° 30'	19° 50′
The 6th called Sabalaessa	113°	20° 15'
The 7th called Lônibarô	113° 30′	20° 15′
3. Bardaxêma, a town	113° 40'	19' 40'

garded the Indus as the boundary of India on the west, and this is the view which has been generally prevalent. Ptolemy, however, included within India

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the regions which lay immediately to the west of that river, comprehending considerable portions of the countries now known as Balachistan and Afghânistân. He was fully justified in this determination, since many places beyond the Indus. as the sequel will show, bore names of Sanskrit origin, and such parts were ruled from the earliest times down to the Muhammadan conquests by princes of Indian descent. The western boundary as given by Ptolemy would be roughly represented by a line drawn from the mouth of the Indus and passing through the parts adjacent to Kandahâr, Ghaznî, Kâbul, Balkh, and even places beyond. The Paropanisadai inhabited the regions lying south of the mountain range called Paropanisos, now known as the Central Hinda-Kash. One of these towns was Ortospana, which has been identified with the city of Kâbul, the Karoura of our author. He gives as the eastern boundary of the Paropanisadai a line drawn south from the sources of the river Oxus through the Kaukasian Mountains (the eastern portion of the Hindú-Kúsh) to a point lving in long. 119° 30' and lat. 39°. Arakhôsia lay to the south of the Paropanisadai-its chief city was Arakhôtos, whose name, according to Rennell, is preserved in Arokhaj. There is a river of the same name which has been identified with the Helmand (the Etymander or Erymanthos of the ancients) but also and more probably with the Urghand-ab or Arkand-ab, which passes by Kandahar. Gedrôsia, the modern Balachistán, had for its eastern boundary the River Indus. The boundary of India on the



north was formed by Mount Imaös (Sansk. hima, cold), a name which was at first applied by the Greeks to the Hindû-Kûsh and the chain of the Himâlayas running parallel to the equator, but which was gradually in the course of time transferred to the Bolor range which runs from north to south and intersects them. Ptolemy, however, places Imaös further east than the Bolor, and in the maps which accompany his *Geography*, this meridian chain, as he calls it, is prolonged up to the most northernly plains of the Irtish and Obi.

S og diana lay to the north of Baktria and abutted on Skythia, both towards the north and towards the west. The name has been preserved in that of Soghd, by which the country along the Kohik from Bokhârâ to Samarkand has always been known. Our author places the Sogdian Mountains (the Pâmir range) at the sources of the Oxus, and the mountains of the Kômêdai between the sources of that river and the Jaxartes.

The Sakai were located to the east of the Sogdians-Ptolemy describes them as nomadic, as without towns and as living in woods and caves. He specifies as their tribes the Karatai (probably connected with the Kirâtai of India), the Komaroi, the Kômêdai, the Massagetai, the Grynaioi Skythai, the Toörnai and the Byltai. The Sakai it would appear therefore were the Mountaineers of Kâfiristân, Badakshân, Shignân, Roshan, Baltistân or Little Tibet, &c.

Syrastrêné and Lariké.

Syrastrên ê:--The name is formed from the Sanskrit Suråshtra (now Sorath) the ancient



name of the Peninsula of Gujarît. It is mentioned in the *Peripliks of the Erythracan Sea* as the sea-board of Abêria, and is there praised for the great fertility of its soil, for its cotton fabrics, and for the superior stature of its inhabitants.

Kanthi:-The Gulf of this name is now called the Gulf of Kachh. It separates Kachh, the south coast of which is still called Kantha, from the Peninsula of Gujarât. In the *Periplás* the gulf is called Barakê and is described as of very dangerous navigation. In Ptolemy, Barakê is the name of an island in the Gulf.

Two mouths only of the Indus are mentioned by the followers of Alexander and by Strabo. The *Pariplús* gives the same number (7) as Ptolemy. There are now 11, but changes are continually taking place. Sagapa, the western mouth, was explored by Alexander. It separates from the main stream below Thatha. In the chronicles of Sindh it is called Sågåra, from which perhaps its present name Ghåra, may be derived. It has long ceased to be navigable.

Sinthôn:—This has been identified with the Piti branch of the Indus, one of the mouths of the Baghâr River. This branch is otherwise called the Sindhi Khrysoun. This is the Kediwârî mouth.

Khariphron:—Cunningham identifies this with the Kyår river of the present day which, he says, leads right up to the point where the southern branch of the Ghâra joins the main river near Lâri-bandar.

Sapara :- this is the Wari mouth.

Sabalaessa is now the Sir mouth.

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L o n i b a r ê in Sańskrit is Lônavâri (or Lôuavadâ, or Lavanavâri or Lâvanavâtâ.²¹ It is now the Kori, but is called also the Launi which preserves the old name.

Bardax ôma:--This, according to Yule, is now Pur-bandar, but Dr. Burgess prefers Srînagar, a much older place in the same district, having near it a small village called Bardiyâ, which, as he thinks, may possibly be a reminiscence of the Greek name.

Syrastra:-This in the Prakritized form is Sorath. It has been identified by Lassen with Junagadh, a place of great antiquity and historical interest in the interior of the Peninsula, about 40 miles eastward from the coast at Navi-bandar. The meaning of the name is the old fort. The place was anciently called Girnagara, from its vicinity to the sacred mountain of Girnar, near which is the famous rock inscribed with the edicts of Aśôka, Skandagupta and Rudra Dâma. Yule identifies Syrastra with Navi-bandar, a port at the mouth of the Bhådar, the largest river of the Peninsula, said to be fed by 99 tributaries. Junagadh was visited by Hiuen Tsiang, who states that after leaving the kingdom of Valabhi (near Bhaunagar) he went about 100 miles to the west and reached the country of Su-la-ch'a (Saurashtra) that was subject to the kingdom of Valabhi See Tarikh-i-Sorath, edited by Dr. Burgess, pp. 33-199.

Monoglôsson:-This is now represented by Maugrol, a port on the S. W. coast of the Penin-

21 Lavana is the Saiskrit word for salt.



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sula below Navi-bandar. It is a very populous place, with a considerable traffic, and is tributary to Junâgadh.

4. In Larikê.	aan di salihi
Mouth of the River Môphis114°	18° 20'
Pakidarê, a village113°	17° 50'
Cape Maleô111°	17º 30'
5. In the Gulf of Barygaza.	
Kamanê	17°
Mouth of the River Namados 112°	17° 45'
Nausaripa	16° 30'
Poulipoula	16°

Larik ô, according to Lassen, represents the Sansk. Râshtrik a in its Prakrit form Latik a. Lâr desa, however, the country of Lâr (Sansk. Lâța) was the ancient name of the territory of Gujarât, and the northern parts of Konkan, and Larikê may therefore be a formation from Lâr with the Greek termination *iké* appended. The two great cities of Barygaza (Bharoch) and Ozônô (Ujjain) were in Larikê, which appears to have been a political rather than a geographical division.

Maleô must have been a projection of the land somewhere between the mouth of the Mahî and that of Narmadâ—but nearer to the former if Ptolemy's indication be correct.

The Gulf of Barygaza, now the Gulf of Khambhat, was so called from the great commercial emporium of the same name (now Bharoch) on the estuary of the Narmadâ at a distance of about 300 stadia from the Gulf. This river is called the Namados or Namadês by Ptolemy and the Namadios by the Author of the *Periplûs*,



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who gives a vivid account of the difficulties attending the navigation of the gulf and of the estuary which was subject to bores of great frequency and violence.

Kamanê is mentioned as Kammônê in the *Periplûs*, where it is located to the south of the Narmadâ estuary. Ptolemy probably errs in placing it to northward of it.

Nausaripa has been identified with Nausåri, a place near the coast, about 18 miles south from Sûrat.

Poulipoula is in Yule's map located at Sanjan, which is on the coast south from Nausâri. It was perhaps nearer Balsâr.

À riak ê corresponds nearly to Mahârâshtrathe country of the Marâthâs. It may have been so called, because its inhabitants being chieffy Aryans and ruled by Indian princes were thereby distinguished from their neighbours, who were either of different descent or subject to foreign domination. The territory was in Ptolemy's time divided among three potentates, one of whom belonged to the dynasty of the Sadineis and ruled the prosperous trading communities that occupied the seaboard. This dynasty



is mentioned in the Periplus (cap. 52) whence we learn that Sandanes after having made himself master of Kalliena (now Kalyana), which had formerly belonged to the house of Saraganes the elder, subjected its trade to the severest restrictions, so that if Greek vessels entered its port even accidentally, they were seized and sent under guard to Barygaza, the seat evidently of the paramount authority. Sadanes, according to Lassen, corresponds to the Sanskrit word Sadhana, which means completion or a perfecter, and also an agent or representative. By Saraganes is probably indicated one of the great Sâtakarni or Andhra dynasty. The Periplús makes Ariâkê to be the beginning of the kingdom of Mambares and of all India.

Soupara has been satisfactorily identified by Dr. Burgess with Supara, a place about 6 miles to the north of Vasai (Bassein). It appears to have been from very early times an important centre of trade, and it was perhaps the capital of the district that lay around it. Among its ruins have been preserved some monuments, which are of historical interest, and which also attest its high antiquity. These are a fragment of a block of basalt like the rocks of Girnar, inscribed with edicts of Aśôka, and an old Buddhist Stúpa. The name of Supårå figures conspicuously in the many learned and elaborate treatises which were evoked in the course of the famous controversy regarding the situation of Ophir to which Solomon despatched the ships he had hired from the Tyrians. There can now be little doubt that if Ophir did not mean India itself it designated



some place in India, and probably Supara, which lay on that part of the coast to which the traders of the west, who took advantage of the monsoon to cross the ocean, would naturally direct their course. The name moreover of Supara is almost identical with that of Ophir when it assumes, as it often does, an initial S, becoming Sôphara as in the Septuagint form of the name, and Sofir which is the Coptic name for India, not to mention other similar forms. (See Benfey's Indien, pp. 30-32).

The mouths of the Goaris and Benda Yule takes to be the mouths of the Strait that isolates Salsette and Bombay. The numes represent, as he thinks, those of the Godávari and Bhima respectively, though these rivers flow in a direction different from that which Ptolemy assigns to them, the former discharging into the Bay of Bengal and the latter into the Krishni, of which it is the most considerable tributary. Ptolemy's rivers, especially those of the Peninsula. are in many instances so dislocated, that it is difficult to identify them satisfactorily. It. appears to have been his practice to connect the river-mouths which he found mentioned in records of coasting voyages with rivers in the interior concerning which he had information from other sources, and whose courses he had only partially traced. But, as Yule remarks, with his erroneous outline of the Peninsula this process was too hazardous and the result often wrong. Mr. J. M. Campbell, Bo.C.S., would identify the Goaris with the Vaitarna River. as Gore is situated upon it and was probably the

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highest point reached by ships sailing up its stream. The sources of the Vaitarna and the Gôdâvarî are in close propinquity. The Bônda he would identify with the Bhiwandî River, and the close similarity of the names favours this view.

Dounga is placed in Yule's map to the S. E. of Supårå on the Strait which separates Salsette from the mainland. Ptolemy, however, through his misconception of the configuration of this part of the coast, places it a whole degree to the west of Supårå. Mr. Campbell, from some similarity in the names, suggests its identity with Dugåd—a place about 10 miles N. of Bhîwandî and near the Vajrabâî hot springs. Dugåd, however, is too far inland to have been here mentioned by Ptolemy, and moreover, it lies to the north of Supårå, whereas in Ptolemy's enumeration, which is from north to south, it is placed after it.

Simylla:--Yule identifies this with Chaul and remarks: "Chaul was still a chief port of Western India when the Portuguese arrived. Its position seems to correspond precisely both with Simylla and with the Saimûr or Jaimûr (*i.e.* Chaimur, the Arabs having no *ch*) of the Arabian geographers. In Al-Bîrûnî the coast cities run: Kambâyat, Bahruj, Sindân (Sanjân), Sufâra (Supârâ), Tana (near Bombay). "There you enter the country of Lârân, where is Jaimûr." Istakhri inverts the position of Sindân and Sufâra, but Saimûr is still furthest south." In a note he adds: "Ptolemy mentions that Simylla was called by the natives Timula (probably Tiamula); and

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putting together all these forms, Timula, Simylla, Saimúr, Chaimúr, the real name must have been something like Chainul or Châmul, which would modernize into Chaul, as Chamari and Prâmara into Chauri and Pawar." Chaul or Chenwal lies 23 miles S. of Bombay. Pandit Bhagvanlal Indraji, Ph.D., suggested as a better identification Chimula in Trombay Island, this being supported by one of the Kanhêri inscriptions in which Chimûla is mentioned, apparently as a large city, like Supårå and Kalyåna in the neighbourhood. Mr. Campbell thus discusses the merits of these competing identifications :-- " Simylla has a special interest, as Ptolemy states that he learned some of his Geography of Western India from people who traded to Simvlla and had been familiar with it for many years, and had come from there to him-Ptolemy speaks of Simylla as a point and emporium. and the author of the Periplús speaks of it as one of the Końkan local marts. Simylla till lately was identified with Chaul But the discovery of a village Chembur on Trombay Island in Bombay Harbour, has made it doubtful whether the old trade centre was there or at Chaul. In spite of the closer resemblance of the names, the following reasons seem to favour the view that Chaul, not Chimûla, was the Greek Simylla. First, it is somewhat unlikely, that two places so close, and so completely on the same line of traffic as Kalyan (the Kalliena of the Periplus) and Chimûla should have flourished at the same time. Second, the expression in the Periplus 'below (µera) Kalliena other local marts are Semulla" points to some place down the coast rather than



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to a town in the same Harbour as Kalliena, which according to the Author's order north to south should have been named before it. Third, Ptolemy's point (promontorium) of Simylla has no meaning if the town was Chembur in Trombay. But it fits well with Chaul, as the headland would then be the south shore of Bombay Harbour, one of the chief capes in this part of the coast, the south head of the gulf or bay whose north head is at Bassein. This explanation of the Simylla point is borne out by Fryer (1675) New Account (pp. 77-82), who talked of Bombay 'facing Chaul' and notices the gulf or hollow in the shore stretching from Bassein to Chaul Point. The old (1540) Portuguese name Chaul Island' for the isle of Kennery of the south point of Bombay, further supports this view." Ptolemy's map gives great prominence to the projection of land at Simylla, which (through a strange misconception on his part, for which it is impossible to account) is therein represented as the great south-west point of India, whence the coast bends at once sharply to the east instead of pursuing its course continuously to the south.

Hippokoura:-This word may be a Greek translation (in whole or in part) of the native name of the place. Hence Pandit Bhagvûnlâl Indraji was led to identify it with Ghodabandar (Horse-port) a town on the Thana Strait, whose position however is not in accordance with Ptolemy's data. Mr. Campbell again has suggested an identification free from this objection. Ghoregâon (Horse-village) in Kolâba, a place at the head of a navigable river, which was once a



seat of trade. Yule takes it, though doubtingly, as being now represented by Kudâ near Râjapûr. Hippokourios was one of the Greek epithets of Poseidôn. Ptolemy mentions another H i p pok o u r a, which also belonged to Ariâkê and was the Capital of Baleokouros. Its situation was inland.

Baltipatna:-This place is mentioned in the Periplús under the somewhat altered form Palaipatmai. Yule locates it, but doubtingly, at Daibal. Fra Paolino identified it with Balaerpatam (the Baleopatam of Rennell) where the king of Cananor resided, but it lies much too far south to make the identification probable. Mr. Campbell has suggested Pali, which he describes as "a very old holy town at the top of the Nagôtna river." Its position, however, being too far north and too far from the sea, does not seem to suit the requirements.

7. (Ariakê) of the Pirates.

Mandagara	113°	14°
Byzanteion		14° 40'
Khersonêsos	114° 20′	14° 30′
Armagara	114° 20′	14° 20'
Month of the River Nanagon	na114° 30'	13° 50′
Nitra, a mart	115° 30'	14° 40'
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Ariake.

Piracy, which from very early times seems to have infested, like a pernicious parasite, the commerce of the Eastern Seas, flourished nowhere so vigorously as on the Konkan Coast, along which richly freighted merchantmen were continually plying. Here bands of pirates, formed into regularly organized communities like those

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of the Thags in the interior of the country, had established themselves in strongholds contiguous to the creeks and bays, which were numerous on the coast, and which afforded secure harbourage to their cruisers. The part of the coast which was subject to their domination and which was in consequence called the Pirate Coast, extended from the neighbourhood of Simylla to an emporium called Nitra, the Mangaruth of Kosmas and the Mangalûr of the present day. Whether the native traders took any precautions to protect their ships from these highwaymen of the ocean is not known, but we learn from Pliny, that the merchantmen which left the Egyptian ports heading for India carried troops on board wellarmed for their defence. Mr. Campbell has ingeniously suggested that by 'Avdpar Heiparav Ptolemy did not mean pirates, but the powerful dynasty of the Andhrabhritya that ruled over the Konkan and some other parts of the Dekhan. He says (Bombay Gazetteer, Thana, vol. II., p. 415 n. 2nd). "Perhaps because of Pliny's account of the Konkan pirates, Ptolemv's phrase Ariaké Andron Peiraton has been taken to mean Pirate Ariâkê. But Ptolemy has no mention of pirates on the Konkan Coast, and, though this does not carry much weight in the case of Ptolemy, the phrase Andron Peiraton is not correct Greek for pirates. This and the close resemblance of the words suggest that Andron Peiraton may originally have been Andhrabhrityon." On this it may be remarked, that though Ptolemy has no mention of pirates on the Konkan Coast this is not in the least sur-



prising, since his work is almost exclusively geographical, and whatever information on points of history we obtain from it is more from inference than direct statement. Further, I do not see why the expression $d\nu\delta\rho\delta\nu \Pi\epsilon\mu\alpha\tau\delta\nu$ if taken to mean pirates should be called incorrect Greek, since in later Attic it was quite a common usage to join $d\nu\eta\rho$ with titles, professions and the like.

M a n d a g ar a :--This may be a transliteration, somewhat inexact, of Madangarh (House of Love) the name of a fort about 12 miles inland from Bankût. More likely the place is Mândlà on the north bank of the Sautrî river, opposite Bankût, and now known as Kolmândlâ, and Bâg and Bâgmândlâ. Mangalûr, to which as far as the name goes it might be referred, is too far south for the identification.

By z a n t e i o n:—The close correspondence of this name with that of the famous capital on the Bosporos has led to the surmise that a colony of Greeks had established themselves on this coast for commercial purposes, notwithstanding the danger to be apprehended from attacks by the pirates in their neighbourhood. It appears however quite unlikely that Greeks should have formed a settlement where few, if any, of the advantages could be enjoyed which generally determined their choice of a locality in which to plant a colony. The name may perhaps be a transliteration of Vijayanta, now Vijayadurga, the south entrance of the Våghotan river in Ratnagiri. The word means the Fort of Victory.

K h e r s o n ô s o s :---This seems to be the peninsula which is in the neighbourhood of Goa. It is

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mentioned in the *Periplás* as one of the haunts of the pirates, and as being near the island of the Kaineitai, that is, St. George's Island.

Armagara :-- This is placed near the mouth of the Nanagouna river, which may be taken to mean here the river on which Sadáśivagarh stands. The Nanagouna however must be identified with the Tapti, whose embouchure is about 6° farther north. Its name is Sanskrit, meaning ' possessed of many virtues.' To account for this extraordinary dislocation, Yule supposes that Ptolemy, having got from his Indian lists a river Nanaguna rising in the Vindhyas, assigns to it three discharges into the sea by what he took for so many delta branches, which he calls respectively Goaris, Benda, and Nanaguna. This, he adds, looked possible to Ptolemy on his map, with its excessive distortion of the western coast. and his entire displacement of the Western Ghats. Mr. Campbell suggests that Ptolemy may have mistaken the Nana Pass for a river.

Nitra is the most southern of the pirate ports, and is mentioned by Pliny in a passage where he remarks that ships frequenting the great emporium of Mouziris ran the risk of being attacked by pirates who infested the neighbourhood, and possessed a place called Nitra. Yule refers it as has been already stated to Mangalur.

8. Limyrikê.

Tyndis, a city	.116°	14° 30'
Bramagara	.116° 45′	14° 20'
Kalaikarias	.116° 40'	14°
Mouziris, an emporium	117°	14°

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TOF INDIA



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2 204

14° 30'

..... 119° 30'

Month of the Priver Lysendo	13 Participation	
tomos		14
Podoperoura	117° 40'	1
Semnê	118º	1
Koreonra	118° 40/	1

Bakarei

Month of the River Baris... 120° 14° 20' Limyrikê:-Lassen was unable to trace this name to any Indian source, but Caldwell has satisfactorily explained its origin. In the introduction to his Dravidian Grammar he states (page 14), that in the Indian segment of the Roman maps called the Peutinger Tables the portion of India to which this name is applied is called Damirike. and that we can scarcely err in identifying this name with the Tamil country, since Damirike evidently means Damir-iké. In the map referred to there is moreover a district called Scytia Dymirice, and it appears to have been this word which by a mistake of Δ for Λ Ptolemy wrote Lymirike. The D, he adds, retains its place in the Cosmography of the Geographer of Ravenna, who repeatedly mentions Dimirica as one of the 3 divisions of India. Ptolemy and the author of the Periphis are at one in making Tyndis one of the first or most northern ports in Limyrikê. The latter gives its distance from Barygaza at 7,000 stadia, or nearly 12 degrees of latitude, if we reckon 600 stadia to the degree. Notwithstanding this authoritative indication, which makes Limyrikê begin somewhere near Kalikat (11° 15' N. lat.) its frontier has generally been placed nearly 3 degrees further north, Tyndis having

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been located at Barcelôr. This error has been rectified by Yule, whose adherence to the data of the *Periplüs* has been completely justified by the satisfactory identification of Mouziris (the southern rival in commercial prosperity of Barygaza) with Kranganur, instead of with Mangalur as previously accepted. The capital of Limyrikê was Karûr, on the Kâvêrî, where resided Kêrobothros, *i.e.*, Kêralaputra, the Chêra king.

Tyndis is described in the Periplus as a place of great note pertaining to the kingdom of Kêprobotras, and situate near the sea at a distance of 500 stadia from Monziris. This distance north from Kranganur with which, as has been stated, Mouziris has been identified, brings us to Tanúr. "Tanúr itself, " says Yule, "may be Tyndis; it was an ancient city, the seat of a principality, and in the beginning of the 16th century had still much shipping and trade. Perhaps, however, a more probable site is a few miles further north, Kadalundi, i. e. Kadal-tundi, 'the raised ground by the sea,' standing on an inlet 3 or 4 miles south of Bepur. It is not now a port, but persons on the spot seem to think that it must formerly have been one, and in communication with the Backwater." He adds in a note supplied by Dr. Burnell, "The composition of Kadal and Tundi makes Kadalundi by Tamil rules." The pepper country called Kottonarike was immediately adjacent to Tyndis, which no doubt exported great quantities of that spice.

Bramagara is placed in the table half a degree to the east of Tyndis, *i.e.*, really to the south of it, since Ptolemy makes the Malabar



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Coast run east instead of south. The name may be a transliteration of the Sanskrit Brahmagdra, which means 'the abode of the Brahmans.' The Brahmans of the south of India appear in those days to bave consisted of a number of isolated communities that were settled in separate parts of the country, and that were independent each of the other. This, as Lassen remarks (Ind. Alt., vol. III, p. 193) is in harmony with the tradition according to which the Arya Brahmans were represented as having been settled by Paraśurâma in 61 villages, and as having at first lived under a republican constitution. In section 74 Ptolemy mentions a town called Brâhmê belonging to the Brâhmanoi Magoi, *i.e.*, 'sons of the Brâhmans.'

K alaik arias:—The last half of this word (Karias) is doubtless the Tamij word for "coast," karei, which appears also in another of Ptolemy's names, Peringkarei, mentioned as one of the inland towns Kandionoi (sec. 89). I find in Arrowsmith's large Map of India a place called 'Chalacoory' to the N. E. of Kranganur, and at about the same distance from it as our author makes Kalaikarias distant from Mouziris.

Mouziris may unhesitatingly be taken to, represent the Muyiri of Muyiri-Kodu, which says Yule, appears in one of the most ancient of Malabar inscriptions as the residence of the King of Kodangalur or Kranganur, and is admitted to be practically identical with that now extinct city. It is to Kranganur he adds that all the Malabar traditions point as their oldest seaport of renown; to the Christians it was the landing-place of St. Thomas the Apostle.



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Mouth of the river Pseudostomos, or 'false-mouth.' According to the table the river enters the sea at the distance of $\frac{1}{3}$ of a degree below Mouziris. It must have been one of the streams that discharge into the Backwater.

Podoperoura must be the Poudopatana of Indikopleustês—a word which means 'new town,' and is a more correct form than Ptolemy's Podoperoura.

Semnê:—The Sanskrit name for Buddhist Asceties was Śramana, în Tamil Samana, and as we find that this is rendered as Semnoi by Clemens Alexandrinus, we may infer that Semnê was a town inhabited by Buddhists, having perhaps a Buddhist temple of noted sanctity. For a different explanation see Lassen's Ind. Ait. vol. III, p. 194.

Bakarei is mentioned by Pliny as Becare, and as Bakarê by the Author of the Periphis, who places it at the mouth of the river on which, at a distance of 120 stadia from the sea was situated the great mart called Nelkynda, or Melkynda as Ptolemy writes it. The river is described as difficult of navigation on account of shallows and sunken reefs, so that ships despatched from Nelkynda were obliged to sail down empty to Bakarê and there take in their cargoes. The distance of Nelkynda from Mouziris is given at about 500 stadia, and this whether the journey was made by sea or by river or by land. Upon this Yule thus remarks : "At this distance south from Kranganur we are not able to point to a quite satisfactory Nelkynda. The site which has been selected as the most probable is nearly 800



stadia south of Mouziris. This is Kallada, on a river of the same name entering the Backwater. the only navigable river on this south-west coast except the Perri-Ar near Kranganur. The Kallada river is believed to be the Kanetti mentioned in the Kêralotatti legendary history of Malabar, and the town of Kallada to be the town of Kanětti. It is now a great entrepôt of Travankor pepper, which is sent from this to ports on the coast for shipment. That Nelkynda cannot have been far from this is clear from the vicinity of the Hughov Jpos or Red-Hill of the Periplus (sec. 58). There can be little doubt that this is the bar of red laterite which, a short distance south of Quilon, cuts short the Backwater pavigation, and is thence called the Warkallê barrier. It forms abrupt cliffs on the sea, without beach, and these cliffs are still known to seamen as the Red Cliffs. This is the only thing like a sea cliff from Mount d'Ely to Cape Comorin." The word Bakarei may represent the Sanskrit dvdraka, 'a door.'

Mouth of the river Baris :-- The Baris must be a stream that enters the Backwater in the neighbourhood of Quilon.



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Limitike and country of the Aioi.

The A i oi :---This people occupied the southern parts of Travankor. Their name is perhaps a transliteration of the Sanskrit *ahi*, 'a snake,' and if so, this would indicate the prevalence among them of serpent worship. Cunningham, in his *Geography of Ancient India* (p. 552), states that in the Chino-Japanese Map of India the alternative name of Malyakûta is Hai-an-men, which suggests a connection with Ptolemy's Aïoi. I note that the entrance to the Backwater at Kalikoulan is called the Great Ayibicca Bar, and an entrance farther south the Little Ayibicca Bar. The first part of this name may also be similarly connected.

Melkynda, as already stated is the Nelkynda of the Periplås, which places it, however, in Limyrikê. Pliny speaks of it as portus gentis Neacyndon (v. II. Neacrindon, Neachyndon, Nelcyndon.) The name, according to Caldwell, probably means West Kynda, that is Kannetri, the south boundary of Kêrala Proper. When Mangalur was taken as the representative of Mouziris, Nelkynda was generally identified with Nelisuram, which besides the partial resemblance of its name, answered closely in other respects to the description of Nelkynda in the Periplås--Cf. C. Müller, not. ad Peripl., Sec. 54. Lassen, Ind. Alt., vol. III, p. 190. Bunbury, Hist. of Anc. Geog. vol. I, pp. 467-8.

Elangkôn or Elangkôr is now Quilon, otherwise written Kulam.

"K ottiara," says Caldwell, "is the name of a place in the country of the Aioi of Ptolemy in the Paralia of the Author of the Periplus, identical



in part with South Travankor. Apparently it is the Cottara of Pliny, and I have no doubt it is the Cottara of the *Peutinger Tables*. It is called by Ptolemy the Metropolis, and must have been a place of considerable importance. The town referred to is probably Kôttâra, or as it is ordinarily written by Europeans 'Kotaur,' the principal town in South Travankor, and now as in the time of the Greeks distinguished for its commerce." *Dravid. Gram.*, Introd. p. 98. The name is derived from kód ' a foot,' and $dr \cdot \hat{u}$ ' a river.'

Bammala:---Mannert would identify this with Bulita, a place a little to the north of Anjenga, but this is too far north. It may perhaps be the Balita of the *Periplús*.

Komaria, a cape and a town :--We have no difficulty in recognizing here Cape Comorin, which is called in the *Periplås* Komar and Komarei. The name is derived from the Sanskrit kumári, ' a virgin,' one of the names of the Goddess Dårgå who presided over the place, which was one of peculiar sanctity. The Author of the *Periplås* has made the mistake of extending the Peninsula southward beyond Comorin.

We may here compare Ptolemy's cnumeration of places on the west coast with that of the *Periplús* from Barygaza to Cape Comorin.

Ptolemy.	Periplús.	
Barygaza	Barygaza	
Nousaripa	Akabarou	
Poulipoula		
Soupara	Souppara	
Dounga	Kalliena	



Ptolemy.

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Periplas.

56

Simylla Island of Milizêgyris

Semvlla Mandagora

Palaipatmai Melizeigara

Byzantion Toparon Tyrannosboas separate groups of 3 islands Khersonêsos Is. of Leukê

Naoura Tyndis

Mouziris

Nelkynda Bakarê Mons Pyrrhos

Balita Komar.

There is a striking agreement between the two lists, especially with respect to the order in

Hippokoura Baltipatna Mandagora Is. of Heptanêsia Byzanteion

Armagara Is. of Peperine Nitra Tyndis Trinêsia Islands Bramagara Kalaikarias Monziris Podoperoura Semnê Is. Leukê Koreoura Melkynda Bakarei Elangkôn Kottiara Bammola Komaria

Khersonêsos


which the places enumerated succeed each other. There are but three exceptions to the coincidence and these are unimportant. They are, Milizegyris, Mandagora and the Island Leukê, i.e. 'white island,' if the name be Greek. The Melizeigara of the *Periplás*, Vincent identifies with Jayagadh or Sidi, perhaps the Sigerus of Pliny (lib. VI, e. xxvi, 100). Ptolemy makes Milizêgyris to be an island about 20 miles south of Simylla. There is one important place which he has failed to notice, Kalliena now Kalyâna, a wellknown town not far from Bombay.

10. Country of the Kareoi.

In the Kolkhic Gulf, where there is the Pearl Fishery :--

Sôsikourai122°	14° 30'
Kolkhoi, an emporium 123°	15°
Mouth of the river Sôlên124°	14° 40'

The country of the Kareoi corresponds to South Tinneveli. The word *karei*, as already stated is Tamil, and means 'coast.' The Kolkhic Gulf is now known as the Gulf of Manâr. The pearl fishery is noticed in the *Periplás*.

Sôsikourai:-By the change of Sinto T we find the modern representative of this place to be Tutikorin (Tuttukudi) a harbour in Tinneveli, where there are pearl banks, about 10 miles south of Kolkhoi. This mart lay on the Sôlên or Tâmraparni river. Tutikorin in the *Peutinger Tables* is called *Colcis Indorum*. The Tamij name is Kolkei, almost the same as the Greek. Yule in his work on Marco Polo (vol II, pp. 360.61) gives the following account of this 8 c



place, based on information supplied by Dr. Caldwell ----

"Kolkhoi, described by Ptolemy and the Author of the Periplus as an emporium of the pearl trade, as situated on the sea-coast to the east of Cape Comorin, and as giving its name to the Kolkhie Gulf or Gulf of Manar has been identified with Korkai, the mother-city of Kayal (the Coël of Marco Polo). Korkai, properly Kolkai (the l being changed into r by a modern refinement, it is still called Kolka in Malayalam), holds an important place in Tamil traditions, being regarded as the birth-place of the Pandya dynasty, the place where the princes of that race ruled previously to their removal to Madura. One of the titles of the Pandya kings is 'Ruler of Korkai.' Korkai is situated two or three miles inland from Kayal, higher up the river. It is not marked in the G. Trig. Surv. map, but a village in the immediate neighbourhood of it. called Maramangalam 'the good fortune of the Pandyas' will be found in the map. This place, together with several others in the neighbourhood, on both sides of the river, is proved by inscriptions and relics to have been formerly included in Korkai, and the whole intervening space between Korkai and Kayal exhibits traces of ancient dwellings. The people of Kayal maintain that their city was originally so large as to include Korkai, but there is much more probability in the tradition of the people of Korkai, which is to the effect that Korkai itself was originally a seaport; that as the sea retired it became less and less suitable for trade, that Kayal rose as Korkai

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fell, and that at length, as the sea continued to retire, Kayal also was abandoned. They add that the trade for which the place was famous in ancient times was the trade in pearls."

Mouth of the River Solen :- This river is identified by Lassen with the Sylaur, which he says is the largest northern tributary of the Tâmraparni. On this identification Yule remarks :-"The 'Syllâr' of the maps, which Lassen identifies with Sôlên, originates, as Dr. Caldwell tells me, in a mistake. The true name is 'Sitt-âr.' 'Little River,' and it is insignificant." The Tâmraparnî is the chief river of Tinneveli. It entered the sea south of Kolkhoi. In Tamil poetry it is called Porunei. Its Pâli form is Tambapanni. How it came to be called the Sôlên remains as yet unexplained. Sola is an element in several South Indian geographical names, meaning Chôla. The word Tâmraparnî itself means 'red-leaved' or ' copper-coloured sand.' Taprobane, the classical name for Ceylon, is this word in an altered form.

11. Land of Pandion.

In the Orgalic Gulf, Cape

Kôry, called also Kalligikon125° 40'	12° 20'
Argeirou, a town	14° 30′
Salour, a mart	15° 30'

The land of P and i on included the greater portion of the Province of Tinneveli, and extended as far north as to the highlands in the neighbourhood of the Koimbatur gap. Its western boundary was formed by the southern range of the Ghâts, called by Ptolemy Mount Bêttigô, and it had a sea-board on the east, which extended for some



distance along the Sinus Orgalicus, or what is now called Palk's Passage.

The Author of the Periplus however, assigns it wider limits, as he mentions that Nelkynda, which lay on the Malabar Coast, as well as the pearl-fishery at Kolkhoi, both belonged to the Kingdom of Pandion. The kingdom was so called from the heroic family of the Pandya, which obtained sovereign power in many different parts of India. The Capital, called Madura, both by Pliny and by our author, was situated in the interior. Madura is but the Tamil manner of pronouncing the Sanskrit Mathurd, which also designated the sacred city on the Jamna famous as the birthplace and the scene of the exploits of Krishna, who assisted the Pandus in their war with the Kurus. The city to this day retains its ancient name, and thus bears, so to speak, living testimony to the fact that the Arvans of Northern India had in early times under Pandya leaders established their power in the most southern parts of the Peninsula.

The Orgalic Gulf lay beyond the Kolkhie Gulf, from which it was separated by the Island of Râmêśvaram and the string of shoals and small islands which almost connect Ceylon with the mainland. It derived its name from Argalou, a place mentioned in the *Periplús* as lying inland and celebrated for a manufacture of muslin adorned with small pearls. The northern termination of the gulf was formed by Cape Kalimir.

Cape Kory :--Ptolemy makes Kory and Kalligikon to be one and the same cape. They are

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however distinct, Kory being the headland which bounded the Orgalic Gulf on the south, and Kalligikon being Point Kalimir, which bounded it on the north. The curvature of this Gulf was called by the Hindús Râmadhanuh, or ' Rama's bow,' and each end of the bow Dhannh-kôti or simply Kôti. The Sanskrit word köti (which means 'end, tip or corner') becomes in Tamil kadi, and this naturally takes the form of Kôri or Kôry. The southern Kôți, which was very famous in Indian story, was formed by the long spit of land in which the Island of Râmêśvaram terminates. It is remarkable, as Caldwell remarks, that the Portuguese, without knowing anything of the Kôpu of the Greeks, called the same spit of land Cape Ramancoru. Ptolemy's identification of Cape Kôry with Kalligikon or Point Kalimîr is readily explained by the fact just stated that each of these projections was called Kôti.

This word Kôti takes another form in Greek and Latin besides that of Kôry, viz., Kôlis, the name by which Pomponius Mela and Dionysios Periégêtês (v. 1148) designate Southern India. The promontory is called Coliacum by Pliny, who describes it as the projection of India nearest Ceylon, from which it was separated by a narrow coral sca. Strabo (lib. XV, c. i, 14) quoting Onêsikritos, speaks of Taprobane as distant from the most southern parts of India, which are opposite the Kôniakoi, 7 days' sail towards the south. For Kôniakoi the reading Kôlîakoi has been with reason suggested.

Ptolemy, like the author of the *Periplús* and other writers, regarded Cape Kôry as the most

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important projection of India towards the south, and as a well-established point from which the distances of other places might conveniently be calculated. He placed it in 125 degrees of E. longitude from Ferro, and at 120 degrees east of the mouth of the River Bætis in Spain from which, however, its distance is only 863 degrees. Its latitude is 9° 20' N. and that of Cape Comorin 8° 5', but Ptolemy makes the difference in latitude to be only 10'.

The identity of Kalligikon with Point Kalimîr has already been pointed out. Calimere is a corrupt form of the Tamil compound Kallimedu, Euphorbia eminence, and so the first part of the Greek name exactly coincides with the Tamil Kalli, which means the Euphorbia plant, or perhaps a kind of cactus. Pliny mentions a projection on the side of India we are now considering which he calls Calingon, and which the similarity of name has led some to identify with Kalligikon, and therefore with Point Kalimîr. It seems better, however, taking into account other considerations which we need not here specify, to identify this projection with Point Gôdávarî.

Before concluding this notice we may point out how Ptolemy has represented the general configuration of the eastern coast beyond the Orgalic Gulf. His views here are almost as erroneous as those he entertained concerning the west coast, which, it will be remembered, he did not carry southward to Cape Comorin, but made to terminate at the point of Simylla, thus effacing from the Map of India the whole of the Peninsula.

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The actual direction of the east coast from point Kalimir is first due north as far as the mouths of the Krishnå, and thereafter north-east up to the very head of the Bay of Bengal. Ptolemy, however, makes this coast run first towards the south-east, and this for a distance of upwards of 600 miles as far as Paloura, a place of which the site has been fixed with certainty as lying near the southern border of Katak, about 5 or 6 miles above Ganjam. Ptolemy places it at the extremity of a vast peninsula, having for one of its sides the long stretch of coast just mentioned, and he regards it also as marking the point from which the Gangetic Gulf begins. The coast of this gulf is made to run at first with an inclination to westward, so that it forms at its outlet the other side of the peninsula. Its curvature is then to the north-east, as far as to the most eastern mouth of the Ganges, and thence its direction is to the south-east till it terminates at the cape near Têmala, now called Cape Negrais, the south-west projection of Pegu.

12. Country of the Ba	toi.	
Nikama, the Metropolis	126°	16°
Thelkheir	127°	16° 10'
Kouroula, a town	128°	16°

13. In Paralia specially so called : the country of the Tôringoi.
Month of the River Khabêros 129° 15° 15′ Khabêris, an emporium128° 30′ 15° 40′ Sabonras, an emporium130° 14° 30′

The Batoi occupied the district extending from the neighbourhood of Point Kâlumîr to the

whether or



southern mouth of the River Kâvêrî and corresponding roughly with the Province of Tanjore.

N i k a m a, the capital, has been identified with Nagapatam (Nâgapațțanam) by Yule, who also identifies (but doubtingly) Thelkyr with Nagor and Kouroula with Karikal.

Paralia, as a Greek word. designated generally any maritime district, but as applied in India it designated exclusively (idias) the seaboard of the Tôringoi. Our author is here at variance with the Periplus, which has a Paralia extending from the Red Oliffs near Quilon to the Pearl-Fisherv at the Kolkhoi, and comprising therefrom the coast-lines of the Aioi and the Kareoi. "This Paralia," says Yule, " is no doubt Purali, an old name of Travankor, from which the Raja has a title Puralisan, 'Lord of Purali.' But the "instinctive striving after meaning" which so often modifies the form of words, converted this into the Greek Hapalía, 'the coast.' Dr. Caldwell however inclines rather to think that Paralia may possibly have corresponded to the native word meaning coast, viz. karei.

In sec. 91, where Ptolemy gives the list of the inland towns of the Tôringoi, he calls them the Sôrêtai, mentioning that their capital was Orthoura, where the king, whose name was Sôrnagos, resided. In sec. 68 again he mentions the Sôrai as a race of nomads whose capital was Sôra where their king, called Arkatos, resided. Caldwell has pointed out the identity of the different names used to designate this people. $\Sigma \hat{\omega} \rho a$, he says, "which we meet alone and in various combinations in these (Ptolemy's) notices represents the

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TNDLA

name of the northern portion of the Tamilian nation. This name is Chôla in Sanskrit, Chôla in Telugu, but in Tamil Sôra or Chôra. The accuracy with regard to the name of the people is remarkable, for in Tamil they appear not only as Sôras, but also as Sôragas and Sôriyas, and even as Sôringas. Their country also is called Sôragam. The r of the Tamil word Sôra is a peculiar sound not contained in Telugu, in which it is generally represented by d or l. The transliteration of this letter as r seems to show that then, as now, the use of this peculiar r was a dialectic peculiarity of Tamil."

The River K h a b êr o s is the Kâvêrî. Kâvêrî. is the Sanskrit word for saffron. Kâvêrî, according to a legend in the Harivańśa, was changed by her father's curse from one-half of the Gangâ into the river which bears her name, and which was therefore also called Ardha-gangâ, *i.e.*; halfgangâ. Karoura, the residence of the Chera king, was upon this river.

Dr. Burnell identified Kh a bêris with Kûvêrîpaţtam (Ind. Ant., vol. VII, p. 40) which lies a little to the north of Tranquebar (Tallangambadi) at the mouth of the Pudu-Kûvêrî (New Kûvêrî).

S a b o u r a s:--This mart Yule refers doubtingly to Gudalur (Cuddalore) near the mouth of the S. Penn-år River.



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The territory of the Arouarnoi (Arvarnoi) was permeated by the River Tyna, and extended northward to Maisôlia, the region watered by the River Maisolos in the lower parts of its course. Opinions differ with regard to the identification of these two rivers, and consequently also of the places mentioned in connection with them. Some of the older commentators, followed by Yule, take the Tyna to be the Pinâka or Penn-âr River, and the Maisôlos the Krishnâ. Lassen again, and recent writers generally, identify the Tyna with the Krishna and the Maisolos with the Gôdâvarî. To the former theory there is the objection that if the Gôdâvarî be not the Maisôlos, that most important of all the rivers on this coast is left unnoticed, and Lassen accordingly asks why should the small Penn-år appear and the great Godâvarî be omitted. To this Yule rejoins, "We cannot say why; but it is a curious fact that in many maps of the 16th and 17th and even of the 18th century the Godávari continues to be omitted altogether. A beautiful



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map in Valentijn (vol. ∇), shows. Gôdâvarî only as a river of small moment, under a local name." He argues further that the name Tynna if applied to the Krishnâ is unaccounted for. As identified with the Penu-âr or Pinâka, TYNNA is an easy error for HYNNA.

Pôdónkê:—This mart is mentioned in the Periplús along with Kamara and Sópatma as ports to which merchants from Limyrikê and the north were wont to resort. According to Böhlen, Ritter and Benfey, it is Paduchchêri (Pondicherry). Lassen and Yule agree, however, in placing it at Pulikât, which is nearly two degrees further north.

In Yule's map Melangê is placed at Krishnapatam, a little to the south of the North Penn-år River, which as we have seen, he identifies with the Tyna. Its name closely approximates to that of the capital Malanga, and hence Cunningham, who takes the Maisôlos to be the Gôdávari, and who locates Malanga in the neighbourhood of Elûr, identifies Melangê with Bandar Malanka (near one of the Gôdâvarî mouths) which he assumes to have been so called from its being the port (bandar) with which the capital that lay in the interior communicated with the sea. See Geog. of Anc. Ind., pp. 539-40.

Manarpha (or Manaliarpha):--This mart lay at the mouth of a viver which still preserves traces of its name, being called the Manâra. Kottis lay not very far to the north of it.

M a i s ô l i a is the name of the coast between the Krishµâ and the Gôdâvarî, and onward thence to the neighbourhood of Paloura. It is the Masalia



of the *Periplâs* which describes it as the sea-board of a country extending far inland, and noted for the manufacture, in immense quantities, of the finer kinds of cotton fabrics. The name is preserved in Masulipațtam, which has been corrupted for the sake of a meaning into Machhlipatam, which means *fish-town*. The Metropolis called P it y n d r a was seated in the interior.

Kontakossyla transliterates, though not quite correctly, the Sanskrit Kantakasthala, 'place of thorns.' In Yule's map it is placed inland near the Krishna, in the neighbourhood of Kondapalle, in which its name seems to be partly preserved.

Koddoura has been identified with Gudrû, a town near Masulipatam.

Allosygnê may perhaps be now represented by Koringa (Koranja) a port situated a little beyond Point Gôdâvarî. Its distance from the point next mentioned in the Tables may be roughly estimated at about 230 miles, but Ptolemy makes it to be only 3 of a degree, and thus leaves undescribed an extensive section of the coast comprising the greater part of the sea-board of the Kalingai. A clue to the explanation of this error and omission is supplied by a passage in the Periplüs, which runs to the effect that ships proceeding beyond Maisôlia stood out from the shore and sailing right across a bay made a direct passage to the ports of Dêsarênê, i.e. Orissa. It may hence be inferred that navigators who came from a distance to trade in those seas would know little or nothing of a coast which they were

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careful to avoid, and that Ptolemy in consequence was not even so much as aware of its existence.

The point whence ships took their departure for Khrysê Yule places at the mouth of a little river called the Baroua (the Puacotta of Lindschoten) lying under Mt. Mahendra in lat. 18° 54' N. This aphetorion, he points out, was not a harbour as Lassen supposed, from which voyages to Khrysê were made, but the point of departure from which vessels bound thither struck off from the coast of India, while those bound for the marts of the Ganges renewed their coasting. The course of navigation here described continued to be followed till modern times, as Yule shows by a quotation from Valentijn's book on the Dutch East Indies (1727) under a notice of Bimlipatam :--- " In the beginning of February. there used to ply . . . to Pegu, a little ship with such goods as were in demand, and which were taken on board at Masulipatam. . . . From that place it used to run along the coast up to 18° N. Lat., and then crossed sea-wards, so as to hit the land on the other side about 16°, and then, on an offshore wind, sailed very easily to the Peguan River of Syriang." (Syriam below Rangun).

16. In the Gangetic Gulf.

Paloura or Pakoura, a town.	.136° 40′	11° 20'
Nanigaina	.136° 20'	12°
Katikardama	.136° 20′	12° 40'
Kannagara	136° 30′	13° 30'
Mouth of the River Manada.	.137°	14°
Kottobara	.137° 15′	14° 40'

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Sippara	15° 30'
Mouth of the River Tyndis138° 30'	16°
17. Mapoura	16° 30′
Minagara140°	17° 15'
Mouth of the Dôsarôn141°	17° 40'
Kôkala142°	18°
Mouth of the River Adamas142° 40'	18°
Kôsamba or Kôsaba	18° 15′

Paloura :-- Ptolemy, as we have seen, placed this town at the extremity of a great peninsula projecting to the south-east, which had no existence however, except in his own imagination. The following passage, quoted by Yule from Lindschoten, shows that the name of Paloura survived till modern times, and indicates at the same time where its site is to be looked for :---" From the river of Puacota to another called Paluor or Palura, a distance of 12 leagues, you run along the coast with a course from S. W. to E. Above this last river is a high mountain called Serra de Palura, the highest mountain on the coast. This river is in 195°." The Palura River must be the river of Ganjam, the latitude of which is at its mouth 19° 23'. Ptolemy fixes at Paloura the beginning of the Gangetic Gulf.

Nanigaina may perhaps be placed at Puri, famous for the temple of Jagannatha Katikardama.

The first part of the name points to the identification of this place with Katak, the capital of Orissa.

Kannagara:--There can be little doubt that we have here the Kanarak of modern times, called also the Black Pagoda.

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Mouth of the Manada :--- Ptolemy enumerates four rivers which enter the Gulf between Kannagara and the western mouth of the Ganges, the Manada, the Tyndis, the Dôsarôn and the Adamas. These would seem to be identical respectively with the four great rivers belonging to this part of the coast which succeed each other in the following order :- The Mahanadi, the Brâhmanî, the Vaitaranî and the Suvarnarêkhå, and this is the mode of identification which Lassen has adopted. With regard to the Manada there can be no doubt that it is the Mahanadi, the great river of Orissa at the bifurcation of which Katak the capital is situated. The name is a Sanskrit compound, meaning 'great river.' Yule differs from Lassen with regard to the other identifications, making the Tyndis one of the branches of the Mahanadi, the Dosaron,-the Bråhmani, the Adamas,-the Vaitarani, and the Kambyson (which is Ptolemy's western mouth of the Ganges)-the Suvarnarêkhâ.

The Dôsarôn is the river of the region inhabited by the Daśârnas, a people mentioned in the *Vishnu Purána* as belonging to the south-cast of Madhya-dêśa in juxta-position to the Sabaras, or Suars. The word is supposed to be from *daśan* 'ten,' and rina 'a fort,' and so to mean 'the ten forts.'

Adamas is a Greek word meaning diamond. The true Adamas, Yule observes, was in all probability the Sank branch of the Brâhmani, from which diamonds were got in the days of Mogul splendour.

Sippara :- The name is taken by Yule as



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representing the Sanskrit *Sårpåraka*. Påra in Sanskrit means 'the further shore or opposite bank of a river.'

Minagara:—The same authority identifies this with Jajhpûr. In Arrowsmith's map I find, however, a small place marked, having a name almost identical with the Greek, Mungrapûr, situated at some distance from Jajhpûr and nearer the sea.

K ôs a m b a is placed by Yule at Balasôr, but by Lassen at the mouth of the Subanrêkhâ which, as we have seen, he identifies with the Adamas. There was a famous city of the same name, Kausâmbî, in the north-west of India, on the River Jamnâ, which became the Pândû capital after. Hastinâpura had been swept away by the Ganges, and which was noted as the shrine of the most sacred of all the statues of Buddha. It is mentioned in the *Rdmdyaisa*, the *Mahdvańsa*, and the *Méghadáta* of Kâlidâsa. It may thus be reasonably concluded that the Kôsamba of Ptolemy was a seat of Buddhism established by propagandists of that faith who came from Kansâmbî.



The fourth mouth, Pseudosto-

The fifth mouth, Antibolê ... 148° 30' 18° 15' Ptolemy appears to have been the first writer who gave to the western world any definite information concerning that part of the Bengal Coast which receives the waters of the Ganges. His predecessors had indeed excelled him in the fulness and accuracy with which they had described the general course of the river, but they did not know, except in the very vaguest way, either where or how it entered the sea. Strabo, for instance, was not even aware that it had more than a single mouth. Ptolemy, on the other hand, mentions by name five of its mouths, and his estimate of the distance between the most western and the most eastern of these (4 degrees of latitude) is not very wide of the mark. Some traces also of his nomenclature are still to be found. It is difficult. however, to identify the mouths he has named with those now existing, as the Ganges, like the Indus, has shifted some of its channels, and otherwise altered the hydrography of its delta. Opinions differ regarding the western mouth, called the Kambyson. One would naturally take it to be the Hughli river, on which Calcutta stands. and V. de Saint-Martin accordingly adopts this identification. It is impossible to doubt, he says, that the Kambysum is the Hughli river, which must have been at all times one of the principal outlets, as is proved historically by the mention of Tâmraliptâ, 600 years before our æra, as one of the most frequented ports of Eastern India. It would be possible enough, he continues, that

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below Diamond Point, the principal channel, instead of passing as now in front of Kalpi remounted to the west in front of Tamluk (the ancient Tâmraliptâ) by the mouth of Tingorcally. and came thus to touch at a locality of which the actual name Nungabusan recalls that of Kambysum or Kambusum, Wilford and Yule, on the other hand, agree in identifying the Kambyson with the Subanrôkha river, which was formerly but erroneously supposed to be a branch of the Ganges, and they are thus free to take the Hughli river as representing the second mouth called by Ptolemy the Mega, the Greek word for 'great.' Saint-Martin identifies this estuary with the River Matlå to which in recent years an attempt was made to divert the commerce of Calcutta, in consequence of the dangers attending the navigation of the Hughli. With regard to the Kamberikhon, or third mouth, there is no difference of opinion. "It answers," says Saint-Martin, "to the Barabanga, a still important estuary, which receives the river of Kobbadak (or rather Kobbarak), which traverses the whole extent of the delta. The Ksheira Samdsa, a modern treatise of Sanskrit Geography, which Wilford has often quoted in his Memoir on the Ancient Geography of the Gangetic basin, calls this river Koumåraka. Here the Kambérikhon of the Greek navigators is easily recognized." The fourth mouth was called Pseudostomon, that is, 'false mouth." because it lay concealed behind numerous islands. and was often mistaken for the easternmost mouth of the Ganges. This Ptolemy calls Antibolê. a name which has not yet been explained. It

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is the Dhakka or old Ganges river, and seems to have been the limit of India and the point from which measurements and distances relating to countries in India were frequently made.

In connexion with the river-mouths Ptolemy mentions two towns, Poloura and Tilogrammon. The former is placed in Yule's map at Jelasur, near the Subanrékhâ, and the latter at Jesor. Its name seems to be compounded of the two Sanskrit words tila, 'sesamum,' and grdma, 'a village or township.'

Ptolemy having thus described the whole seacoast of India, from the mouths of the Indus to those of the Ganges, gives next a list of its mountain ranges, together with figures of Latitude and Longitude, showing the limits of the length of each range as well as the direction.

19. The mountains belonging to Intragangetic India are named as follows :---

The Apokopa, called *Poinai Theôn*, which extend from long. 116° to 124° and from lat. 23° at their western limit to 26° at the eastern.

20. Mount Sardônyx, in which is found the precious stone of the same name, and whose middle point is in long. I17° and lat. 21°.

21. Mount Ouïndion (Vindion) which extends from 126° to 135°, and preserves from its western to its eastern limit a uniform latitude of 27°.

Ptolemy enumerates seven of these, probably following some native list framed in accordance with the native idea that seven principal mountains existed in each division of a continent. A



Paurânik list gives us the names of the seven which pertained to India, Mahêndra, Malaya, Sahya, Suktimat, Riksha, Vindhya and Pâripâtra or Pâriyâtra. This can hardly be the list which Ptolemy used, as only two of his names appear in it, Ouxenton (---) Ŗiksha, and Ouindion (---) Vindhya. As his views of the configuration of India were so wide of the mark, his mountain ranges are of course hopelessly out of position, and the latitudes and longitudes assigned to them in the tables afford no clue to their identification. Some help however towards this, as Yule points out, lies in the river-sources ascribed to each, which were almost certainly copied from native lists, in which notices of that particular are often to be found.

The Apokopa, or 'punishment' of the ' gods' :--- There is a consensus of the authorities in referring the range thus named to the Aravali mountains. Mount Arbuda (Abu) which is by far the most conspicuous summit, is one of the sacred hills of India. It was mentioned by Megasthenes in a passage which has been preserved by Pliny (N.H. lib. VI,c. xxi) who calls it Mons Capitalia, i.e. the ' Mount of Capital Punishment,' a name which has an obvious relation to the by-name which Ptolemy gives it, 'the punishment of the gods.' The word apokopa is of Greek origin, and means primarily 'what has been cut off,' and is therefore used to denote 'a cleft,' 'a cliff,' 'a steep hill.' It occurs in the Periplús (sec. 15) where it designates a range of precipitous hills running along the coast of Azania, i.e. of Ajan in Africa. Its Sanskrit equivalent may have been given as a name to Mount Arbuda because of its having

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been at some time rent by an earthquake. In point of fact the *Mahåbhårata* has preserved a tradition to the effect that a cleft (*chhidra*) had here been made in the earth. Such an alarming phenomenon as the cleaving of a mountain by an earthquake would naturally in superstitious times be ascribed to the anger of the gods, bent on punishing thereby some heinous crime. (See Lassen's *Ind. Alt.* vol. III, pp. 121-2).

Mount Sardônyx is a short range, a branch of the Vindhya, now called Sâtpura, lying between the Narmadâ and the Tâpti: it is mentioned by Ktêsias (frag. 8) under the name of Mount Sardous. It has mines of the carnelian stone, of which the sardian is a species. The *Periplâs* (sec. 49) notices that onyx-stones were imported into Barygaza from the interior of the country, and that they were also among the articles which it exported.

Mount O u i n d i o n :- This is a correct transliteration of Vindhya, the native name of the extensive range which connects the northern extremities of the Western and Eastern Ghâts, and which separates Hindûstân proper-the Madhya-dôśa or middle region, regarded as the sacred land of the Hindûs-from the Dekhan. Ptolemy, as Lassen remarks (Ind. Alt. vol. III, p. 120), is the only geographer of classical antiquity in whose writings the indigenous name of this far-spread range is to be found. His Vindion however does not embrace the whole of the Vindhya system, but only the portion which lies to the west of the sources of the Sôn. Sanskrit writers speak of the Vindhyas as a family of mountains. They



extended from Baroda to Mirzapur, and were continued thence to Chunar.

22. Bêttigô, which extends from 123° to 130°, and whose western limit is in lat. 21° and its eastern in 20°.

23. Adeisathron, whose middle point is in long. 132° and in lat. 23°.

24. Ouxenton, which extends from 136° to 143°, and whose western limit is in lat. 22° and its eastern in 24°.

25. The Oroudian Mountains, which extend from 138° to 133°, and whose eastern limit is in 18° lat. and its western 16°.

Mount Bêttigô:-As the rivers which have their sources in this range-the Pseudostomos, the Baris, and the Sôlên or Tâmraparni, all belong to South Malabar, there can be no doubt that Bêttigô denotes the southern portion of the Western Ghâts extending from the Koimbatur gap to Cape Comorin-called Malaya in the Paurânik list already quoted. One of the summits of this range, famous in Indian mythology as the abode of the Rishi Agastya, bears the name in Tamil of Podigei, or as it is pronounced Pothigei. It is visible from the mouth of the Tâmraparni, which has its sources in it, and from Kolkhoi, and the Greeks who visited those parts, and had the mountain pointed out to them would no doubt apply the name by which they heard it called to the whole range connected with it. (See Caldwell's Dravid, Gram. Introd. p. 101.)

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A deisathron :-- If we take Ptolemy's figures as our guide here, we must identify this range with the chain of hills which Lassen describes in the following passage :-- " Of the mountain system of the Dekhan Ptolemy had formed an erroneous conception, since he represented the chain of the Western Ghâts as protruded into the interior of the country, instead of lying near to the western coast with which it runs parallel, and he was misled thereby into shortening the courses of the rivers which rise in the Western Ghats. The chain which he calls Adeisathron begins in the neighbourhood of Någpur and stretches southward to the east of the rivers Wain + Ganga and Pranita, separates the Godâvarî from the Krishnâ, and comes to an end at the sources of the Kavéri. This view of his meaning is confirmed by the fact that he locates the two cities Baithana or Pratishthâna which lies to the east of the Western Ghâts, on the Gôdâvarî, and Tagara both to the west of Adeisathron. He was led into this misrepresentation partly through the incompleteness and insufficiency of the accounts which he used. and partly through the circumstance that the Eastern Ghât does not consist of a single chain, but of several parallel chains, and that to the south of the sources of the Kâvêrî the Eastern Ghât is connected with the Western Ghât through the Nilgiri Mountains. The name Adeisathron, one sees, can only refer to the West Ghat in which the Kåvêrî rises." (Ind. Alt. vol. III, pp. 162-3). Yule explains the source of Ptolemy's error thus : "No doubt his Indian lists showed him Kåvéri rising in Sahyâdri (as does Wilford's list from the



Brahmanda Párâna. As. Res. vol. VIII, p. 335f.). He had no real clue to the locality of the Sahyâdri, but found what he took for the same name (Adi: sathra) applied to a city in the heart of India, and there he located the range." Adeisathron must therefore be taken to denote properly that section of the Western Ghâţs which is immediately to the north of the Koimbatur gap, as it is there the Kâvêrî rises. The origin of the name Adeisathron will be afterwards pointed out.

Ouxenton designates the Eastern continuation of the Vindhyas. All the authorities are at one in referring it to the mountainous regions south of the Sôn, included in Chhutia Någpür, Råmgarh, Sirguja, &c. Ptolemy places its western extremity at the distance of one degree from the eastern extremity of the Vindhyas. The rivers which have their sources in the range are the Tyndis, the Dôsarôn, the Adamas and an unnamed tributary of the Ganges. The name itself represents the Sanskrit Rikshavant, which however did not designate the Eastern Vindhyas. but a large district of the central. This difference in the application of the names need not invalidate the supposition of their identity. The authors whom Ptolemy consulted may have misled him by some inaccuracy in their statements, or the Hindûs themselves may have intended the name of Rikshavant to include localities further eastward than those which it primarily denoted. Riksha means 'a bear.' and is no doubt connected with the Greek word of the same meaning, arktos.

The Oroudian Mountains :-- "This we take."

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says Yule, "to be the Vaidarya just mentioned, as the northern section of the Western Ghâts, though Ptolemy has entirely misconceived its position. We conceive that he found in the Indian lists that the great rivers of the eastern or Maesolian Coast rose in the Vaidarya, and having no other clue he places the Oradia (which seems to be a mere metathesis of Odárya for Vaidárya) near and parallel to that coast. Hence Lassen and others (all, as far as is known) identify these Oroudian Mountains with those that actually exist above Kalinga. This corresponds better, no doubt, with the position which Ptolemy has assigned. But it is not our business to map Ptolemy's errors; he has done that for himself; we have to show the real meaning and application of the names which he used, whatever false views he may have had about them."

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Sources	oftl	ie Ri	ver Sai	ndabal	129°	36°	
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Regarding the origin and meaning of the name Indus, Max Müller (India, what it can teach us) says: "In the Védas we have a number of names of the rivers of India as they were known to one single

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